# TCD-D8

# SERVICE MANUAL

Ver 1.1 2001. 06

*US Model*
*Canadian Model*
*AEP Model*
*UK Model*
*E Model*
*Tourist Model*

DAT
Digital Audio Tape

WALKMAN

| | |
|---|---|
| Model Name Using Similar Mechanism | TCD-D7/D7K |
| Tape Transport Mechanism Type | MT-D8-47 |

## SPECIFICATIONS

Tape: Digital audio tape

Recording time: Standard 120 minutes
Long-play mode: 240 minutes
(with DT-120)

Sampling frequency: 48 kHz, 44.1 kHz, 32 kHz

Frequency response: Standard: Fs 48 kHz 20-22,000 Hz (±1.0 dB)
Fs 44.1 kHz 20-20,000 Hz (±1.0 dB)
Fs 32 kHz 20-14,500 Hz (±1.0 dB)
Long-play mode: Fs 32 kHz 20-14,500 Hz (±1.0 dB)

Signal to noise ratio: Standard: more than 87 dB
Long-play mode: more than 87 dB
(1 kHz IHF-A, 22 kHz LPF, LINE IN)

Dynamic range: Standard: more than 87 dB
Long-play mode: more than 87 dB
(1 kHz IHF-A, 22 kHz LPF, LINE IN)

Total harmonic distortion: Standard: less than 0.008% (1 kHz, 22 kHz LPF, LINE IN)
Long-play mode: less than 0.09% (1 kHz, 22 kHz LPF, LINE IN)

Wow and flutter: Below measurable limit (less than ±0.001% W.PEAK)

**Input**

| | Jack type | Impedance | Rated input level | Minimum input level |
|---|---|---|---|---|
| MIC | stereo minijack | 4.7 kilohms | — | 0.4 mV |
| LINE IN | stereo minijack | 47 kilohms | 500 mV | 80 mV |

**Output**

| | Jack type | Impedance | Rated output | Maximum output level | Load impedance |
|---|---|---|---|---|---|
| PHONES/ LINE OUT | stereo minijack | 27 ohms | LINE OUT 500 mV | PHONES 5 mW + 5 mW | LINE OUT more than 10 kilohms PHONES 32 ohms |

Input/Output: DIGITAL I/O REMOTE jack (special jack)
Digital input/output, remote control operation and timer-activated operation is possible by connection with an adaptor kit to this jack.

Power requirements:
- DC 6V four size AA (LR6) batteries
- DC IN 6 V jack accepts:
the Sony AC power adaptor AC-E60AM or AC-E60HG (not supplied) for use on

| | Operating voltage |
|---|---|
| US, Canadian model | 120V AC, 60Hz |
| AEP model | 220—230V AC, 50Hz |
| German model | 120V AC, 60Hz or 220V AC, 50Hz |
| UK model | 240V AC, 50Hz |
| E model | 110—120V, 220—240V AC, 50/60Hz |
| Tourist model | 100—240V AC, 50/60Hz |

the car battery cord DCC-E160L (not supplied) for use with 12 V car battery or DCC-E260HG (not supplied) for use with 12V/24V car battery.

Battery life (when the illumination for display window is off)*

| | Playback (Approx. hours) | Recording (recording monitor) (Approx. hours) |
|---|---|---|
| Sony alkaline (size AA) LR6/AM3 | 3.5 | 3 (4**) |
| Sony rechargeable (size AA) NC-AA | 2 | 1.5 (2**) |

* Measured at 20°C
** When the headphones or active speaker system is unplugged from the PHONES/ LINE OUT jack

Power consumption: 1.2 W

Dimension: Approx. 132.6 x 36.7 x 88.2 mm (51/4 x 11/2 x 31/2 in) (w/h/d) not incl. projecting parts and controls

Mass: Approx. 510 g (1 lb. 1 oz.) incl. batteries

**Supplied accessories**
AC power adaptor* AC-E60AM or AC-E60HG (1)
Alkaline (size AA) LR6 battery (4)
DAT cleaning cassette DT-10CLA (1)
Digital cable* POC-DA12
Carrying case (1)

* These accessories may be supplied to certain models.

Design and specifications are subject to change without notice.

DIGITAL AUDIO TAPE-CORDER

SONY®

9-960-401-12
2001F0400-1
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Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

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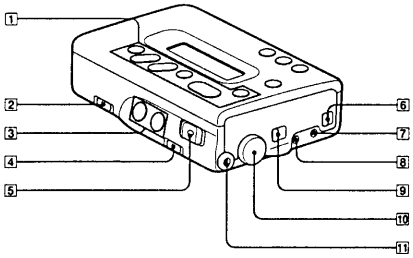
# SECTION 1
# GENERAL

This section is extracted from instruction manual.

## Location and Function of Controls

Refer to the pages in () for details.




1 Tape operation buttons:
⏮/◀◀ (rewind/review • AMS) button (12, 13, 22)
STOP ■ button (10, 12)
PLAY ▶ button (12)
▶▶/⏭ (fast-forward/cue • AMS) button (12, 13, 22)
REC (record)/ID WRITE (Start ID write) button (9, 17, 19)
PAUSE ⏸ button (9, 12)

2 SP/LP (standard play (48 kHz/44.1 kHz)/long play mode select) switch (9, 16, 17)

3 VOLUME +/– buttons (12)

4 PHONES (AVLS)/LINE OUT (headphones, automatic volume limiter system/line output) switch (18, 23, 24)

5 HOLD/PUSH OPEN switch (6, 26)
To open the cassette compartment lid.
→ Press and hold down the small button and slide the switch to OPEN.
To prevent accidental operation. (Hold function)
→ Slide the switch to HOLD without pressing the small button.
Hold function does not lock the CLOCK/SET, COUNTER/–, RESET/+ buttons (except for the low-power consumption mode). Slide the switch to HOLD in the stop mode to enter the low-power consumption mode.

6 MIC SENS (microphone sensitivity) switch (9)

7 MIC (microphone) jack (8)

8 LINE IN (line input) jack (15)

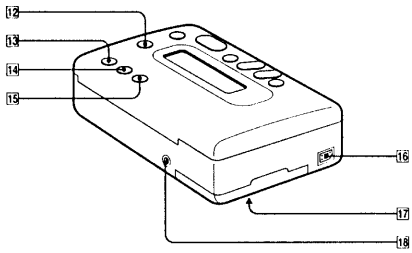
9 REC MODE (recording mode) switch (9)

10 REC LEVEL (recording level) control (17)

11 PHONES/LINE OUT (headphones/line output) jack (12, 17, 23)

Additional Information






12 LIGHT button
Press to illuminate the display when using the tape-corder in the dark.

13 RESET/+ button (5, 40)

14 COUNTER/- button (5, 40)

15 CLOCK/SET button (5, 41)

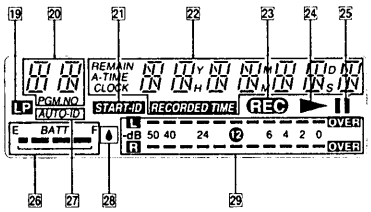
16 REMOTE-DIGITAL I/O (input/output) jack (14, 23, 28)
Connect equipment with digital input/output using the connecting cable POC-DA12/DA12M/DA12S or RK-D3K (not supplied), the adaptor kit RM-D3K, the remote control RMT-D7, or the super bit mapping adaptor SBM-1 etc.

17 Battery compartment lid (4)

18 DC IN 6V (external power input) jack (27)



### Display window




19 LP (Long Play) mode indicator (17, 18)

20 PGM.NO (program number)· day ·AM/PM indicator (5, 13)

21 START-ID indicator (19)

22 Tape counter/clock/message indicator (30, 40, 41)

23 REC (recording) indicator

24 ▶ (playback) indicator

25 ⏸ (pause) indicator

26 BATT (remaining battery power status) indicator (25)

27 AUTO-ID (automatic Start ID signal) indicator (19)

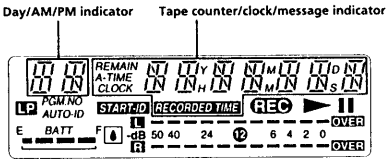
28 Moisture condensation indicator (31, 33)

29 Peak level indicator (17)

Additional Information

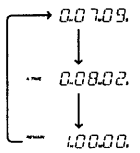


### Using the display




**Tape counter display**

Each time the COUNTER button is pressed, the display changes as follows:




Tape counter (normal display)

Absolute time (absolute time from the beginning of the tape)

Remaining time of the tape

**To reset the tape counter (normal display) to "0H00M00S"**

Press the RESET button.

**Note**

The tape counter is provided as a visual guideline and is not a clock. The value displayed in the counter is not an accurate depiction of the actual time. Therefore, do not use the tape counter as a clock.

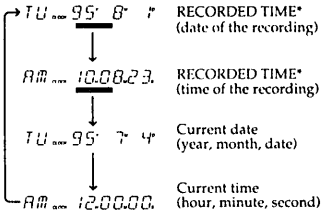
**Remaining time of the tape**

The remaining time of the tape appears normally after about 16 seconds of commencing playback in the SP mode. However, there may be a deviation in the amount of time displayed depending on the tape.

**Note**
When the tape-corder enters the recording, recording monitor, or pause mode while RECORDED TIME is indicated, the tape-corder displays the current time.

**Message display**
Refer to page 30 for "Message Display".

**Clock display**
Each time the CLOCK button is pressed, the display changes as follows:




RECORDED TIME* (date of the recording)
RECORDED TIME* (time of the recording)
Current date (year, month, date)
Current time (hour, minute, second)

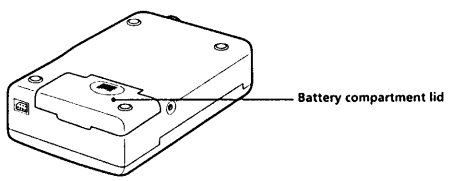
* The RECORDED TIME is displayed while playing back only.





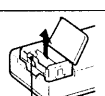
## Inserting the Batteries

Use four size AA (LR6) alkaline batteries.



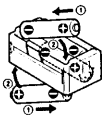

**1**

Open the battery compartment lid.

**2** 

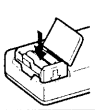
Remove the battery holder.

Lift the tab (△ PULL).

**3** 

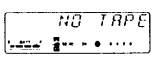
Insert 4 new alkaline batteries into the battery holder. Make sure that the batteries are facing the correct directions.

Insert from the ⊖ side of the battery.

**4** 

Insert the battery holder with the alkaline batteries and close the compartment lid.

The LCD display appears when the batteries are inserted.

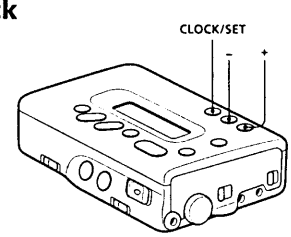




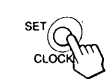

## Setting the Clock

Set the clock before starting any recording operations to stamp the date and time. Otherwise, you cannot get the correct date and time.

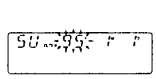
The clock will return to its default setting (SU/95Y1M1D/AM12H00M00S) if the batteries are removed from the unit for one hour or more. In this case, set the clock again.

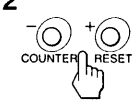



Make sure that the tape-corder is in the stop mode when the cassette is inserted, and that the Hold function is disabled.

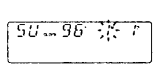
**1** 

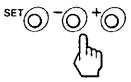

Press the CLOCK/SET button for more than four seconds.




**2** 

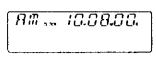

Press + or – button to set the current year, then press the CLOCK/SET button.




**3** 


Repeat step 2 to set the current month, date, day, hour, minute, and second.

The display stops flashing and the clock operates.

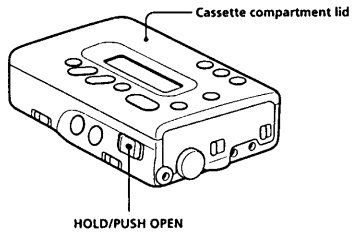



**Tip**
To set the clock accurately, set the second to 00 with the + or – button, and then press the CLOCK/SET button at the time of the tone.

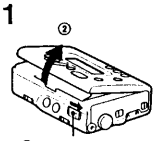
**To select either the 12-hour or 24-hour clock display**
Press the + button for 2 seconds or more.

**To quit the clock setting**
Press the STOP ■ button. The clock display will return to the previous clock setting. However, if the day is set , the year, month, date and day will be set and will not be applicable for further cancellation.

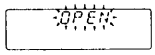
# Inserting the Cassette




**1**



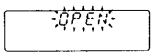

Open the cassette compartment lid.
① Press the HOLD/PUSH OPEN switch and slide to OPEN. Release the switch when the cassette compartment lid opens slightly.
② Open the cassette compartment lid.



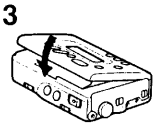

**2**

Insert the cassette.

Insert the cassette with the window facing up. When the cassette is inserted upside down, removal of the cassette may not be possible.

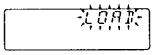



**3**



Close the lid.

The cassette is loaded automatically.






**Notes**

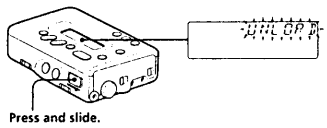
- Make sure that the cassette compartment lid is closed and "UNLOAD" or "LOAD" is not displayed before disconnecting the AC power adaptor or removing the batteries. Otherwise, the cassette compartment lid may not close. In this case, connect the power adaptor or insert the batteries again.
- Press and hold the button in the center of the HOLD/PUSH OPEN switch when sliding it to OPEN.

**Tip**

While the tape-corder is in the stop mode, slide the HOLD/PUSH OPEN switch to HOLD to enter the low-power consumption mode manually. (See page 26.)

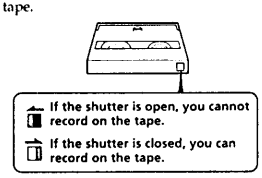
### To eject the cassette

While the tape-corder is in the stop mode, press the HOLD/PUSH OPEN switch and slide to OPEN.




### To protect your recording

Slide open the record-protect shutter to record-protect your tape.

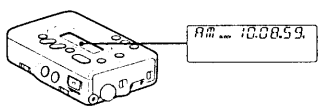



### Notes on DAT cassettes

- Unlike conventional analog cassettes, playback and recording are applicable on one side of the cassette only.
- Under normal usage, the construction of the DAT cassette prevents undesirable entry of dust and foreign particles. Do not open the DAT cassette unnecessarily.
- Do not insert items into the holes on the reverse side of the DAT cassette.

### To prevent accidental operations

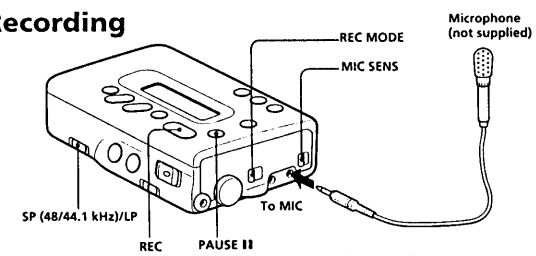
Slide the HOLD/PUSH OPEN switch to HOLD.








# Recording




Refer to page 15 for "Connecting with Other Equipment for Recording".

**Note**

The absolute time may not be written correctly in the following cases.

- When recording on a partially recorded tape containing an unrecorded segment (i.e., a portion of the tape that has never been recorded).
- When recording on a partially recorded tape for which the absolute time has not been written originally.

**Note**

Do not press the STOP ■ button when "bLANK" is displayed. If pressing it, the absolute time will become "— —H— —M— —S" and will not be written thereafter.

### Locating the point at which to begin recording

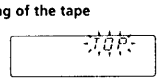
The absolute time is automatically written simultaneously while recording.

The absolute time is indicated as the length of time from the beginning of the tape, and is useful in determining the elapsed time from the beginning of the tape. If you wish to continue to record on a partially recorded tape, make sure that you initially locate the end of the previous recording prior to resuming recording from that point to avoid leaving any unrecorded segment unnecessarily. Once the absolute time is written, it cannot be erased.

If you wish to insert a four-second blank segment automatically, refer to page 18 for "Recording blank segment—REC MUTE".

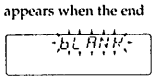
#### To record from the beginning of the tape

Press the I◄◄ / ◄◄ button to rewind the tape. "TOP" flashes when the tape is rewound to the beginning.




#### To record on a partially recorded tape

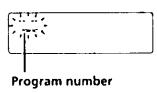
Press the ►► / ►►I button to locate the end of the previous recording. "bLANK" appears when the end of the previous recording is located, and the tape stops at the point.






#### When "— —" flashes for the program number

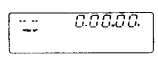
"— —" indicates an unrecorded segment. Press the I◄◄ / ◄◄ button to rewind the tape until "— —" stops flashing. Then, press the ►► / ►►I button to locate the end of the previous recording.




### Recording from a microphone

**1**

Insert a cassette and locate the point at which to begin recording.

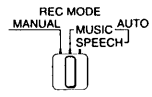



**2**

Set the MIC SENS switch.

H: Normal
L: For loud sound

**3**




Set the REC MODE switch

Select AUTO (MUSIC or SPEECH).
The tape-corder adjusts the recording level automatically.
MUSIC: For music
SPEECH: For a meeting or conference
Select MANUAL when you want to adjust the recording level manually. (See page 17.)

**4**

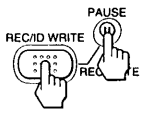
Select the sampling frequency.

Select SP (Standard Play mode 48 kHz or 44.1 kHz).

When recording in the Long Play mode, select LP. (See page 17.)

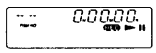
continued

**5**

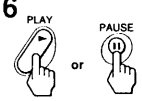



Press the REC and PAUSE ❚❚ buttons.

The tape-corder enters the pause mode. When the REC button only is pressed, the tape-corder enters the recording monitor mode (see page 18) and does not begin recording.



**6**




Press either the PLAY ► or PAUSE ❚❚ button.

The recording begins.

**Tips**

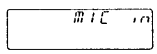
- To begin recording immediately, press the PLAY ► button while pressing the REC button in the stop or playback mode.
- The input source is displayed when the source is changed during recording, monitoring, or in the recording pause mode.
- The sampling frequency is displayed when the sampling frequency is changed during recording.

**Notes**

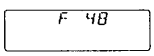
- Changing the sampling frequency while recording may cause temporary sound dropout to be recorded.
- Connecting or disconnecting the plug from the PHONES/LINE OUT jack while recording may cause noise to be recorded.
- Noise may be recorded when the display light is turned on while recording. In this case, turn it off.

### Other operations

| To | Press |
|---|---|
| Stop recording | STOP ■ |
| Pause recording | PAUSE ❚❚ |
| Release pause | PAUSE ❚❚ or PLAY ► |
| Check the input source | |
| in the stop mode | REC twice |
| in the recording pause mode | REC<br>Press the button until the following display appears. |



| | |
|---|---|
| Check the sampling frequency | PLAY ► in the recording mode<br>The following display appears while the button is pressed. |





**Tips**

- If the tape-corder remains in the pause mode for five minutes or more, the tape-corder will enter the stop mode automatically in order to protect the head and tape.
- If the tape-corder remains in the stop mode for three minutes or more, the tape-corder will enter the low-power consumption mode automatically (see page 26) to protect the tape and to conserve the battery (except in the monitoring mode).
- When the tape-corder records to the end of the tape, it rewinds the tape automatically to the beginning and stops. (Auto-rewind function).

### To record relatively low sound

Lower the recording level (in the MANUAL recording mode) and move the microphone as close as possible to the source. Clear and optimum recording with minimal noise interferences will be achieved.

### Choosing microphones for better recording

The recording are affected by and are dependent upon the type of microphones used. For better recording, use the optional ECM-959A or ECM-737 microphone.

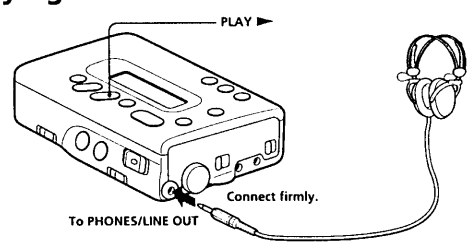
**Compatible microphones**

- Optional plug-in power type microphones are available for this tape-corder.
- Optional auto power supply type microphones are not available for this tape-corder.





# Playing Back




Refer to page 23 for "Connecting with Other Equipment for Playback".

**1**

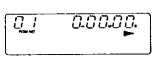
Insert a cassette and set the PHONES (AVLS)/LINE OUT switch to ∩ AVLS OFF.

Set to ∩ AVLS ON when using the AVLS* function.

**2**

Press the PLAY ► button.

The playback begins.



**Tips**

- The SP (Standard Play) mode and LP (Long Play) mode will be detected automatically for playback. Therefore, it is not necessary to adjust the SP/LP switch.
- When the tape-corder plays back to the end of the tape or End ID, it rewinds the tape automatically to the beginning and stops (Auto-rewind function).

* Automatic Volume Limiter System

### Other operations

| To | Press |
|---|---|
| Adjust the volume | VOLUME +/– |
| Stop playback | STOP ■ |
| Pause playback | PAUSE ❚❚ |
| Release pause | PAUSE ❚❚ or PLAY ► |
| Fast forward | ►►/►►I in the stop mode |
| Rewind | I◄◄/◄◄ in the stop mode |



**Tips**

- If the tape-corder remains in the pause mode for five minutes or more, the tape-corder will enter the stop mode automatically in order to protect the head and tape.
- If the tape-corder remains in the stop mode for three minutes or more, the tape-corder will enter the low-power consumption mode automatically (see page 26) to protect the tape and to conserve the battery (except in the monitoring mode).

**Notes**

- The AMS function will not operate if the Start IDs are not written. (See page 19.)
- The AMS function may not operate properly with a DAT cassette recorded on another DAT deck.

* Automatic Music Sensor

### To fast-forward/rewind while monitoring the sound

You can fast-forward (cue) or rewind (review) while monitoring the sound.

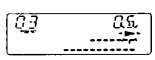
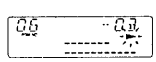
| | |
|---|---|
| Cue | Press and hold ►►/►►I in the playback mode. When the button is released, normal playback resumes. |
| Review | Press and hold I◄◄/◄◄ in the playback mode. When the button is released, normal playback resumes. |

### To high speed cue/review

| | |
|---|---|
| High speed cue | Press PLAY ► and ►►/►►I during playback. |
| High speed review | Press PLAY ► and I◄◄/◄◄ during playback. |

### To locate the beginning of a program (track)—AMS* function

You can locate the beginning of a program (track) in the playback, fast-forward/rewind, and stop modes.
Playback mode: Press ►►/►►I or I◄◄/◄◄ quickly.
Fast-forward/rewind mode: Press ►►/►►I or I◄◄/◄◄ once.
Stop mode: Press ►►/►►I or I◄◄/◄◄ twice.

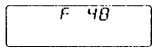
| | |
|---|---|
| To locate the beginning of the next/succeeding program (track) | Press ►►/►►I once/repeatedly |
| E.g.: When locating the beginning of the fifth succeeding program (track) |  |
| To locate the beginning of the current/previous program (track) | Press I◄◄/◄◄ once/repeatedly |
| E.g.: When locating the beginning of the fourth previous program (track) including the current program (track) |  |

### To check the sampling frequency

You can check the sampling frequency of the recorded sound.

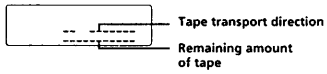
Pres PLAY ► in the playback mode

The following display appears while the button is pressed.




### Display during fast-forward/rewind (AMS function)

Peak level indicator (L) shows the tape transport direction. Peak level indicator (R) shows the remaining amount of tape.




### To play back the tape from the beginning automatically—Auto-play function

Press the PLAY ► button while pressing the I◄◄ / ◄◄ button. Playback begins automatically when the tape is rewound to the beginning.

Likewise, playback begins automatically when the tape is rewound to the beginning of the previous program (track) in the AMS function.



**Tip**

In digital connection, setting of the SP/LP switch is applicable when recording a 32 kHz source only. (When set to SP, the source is recorded in the 32 kHz SP mode. When set to LP, the source is recorded in the 32 kHz LP mode.)

The sampling frequency for recording is automatically set depending upon the source.

### Source and sampling frequency for recording

Observe the following suggested guidelines for the source and sampling frequency when recording.

| Source | Sampling frequency |
|---|---|
| Broadcasting satellite B mode audio<br>DAT SP mode | 48 kHz |
| CD<br>MD | 44.1 kHz |
| Broadcasting satellite A mode audio<br>DAT LP mode | 32 kHz |





## Connecting with Other Equipment for Recording

You can connect the tape-corder to other analog audio equipment and audio equipment with digital output. Refer to page 8 for "Recording".

**Note**

When recording from analog audio equipment, disconnect the microphone from the tape-corder.

Otherwise, the sound from the microphone is recorded.

**Notes**

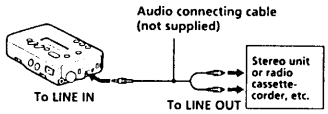
- If "COPY PROHIBIT" is displayed, the source cannot be recorded. (See page 30.)
- Make sure to set the switch of the connecting cable to DIGITAL before recording. The input remains as analog input even if the switch is set to DIGITAL while recording.

**Tips**

When connecting with an audio equipment with digital output, note the followings:

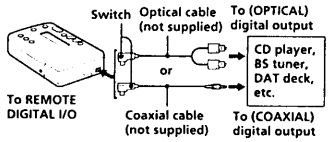
- Setting of the recording mode is not required.
- The recording level is set automatically to the level of the source. It is impossible to adjust it with this tape-corder manually.

### Recording from analog audio equipment (Analog connection)




1 Select the recording mode and sampling frequency.
2 Press the REC and PAUSE II buttons.
3 Press either the PLAY ► or PAUSE II button to begin recording. Then, begin playback of the connected source.

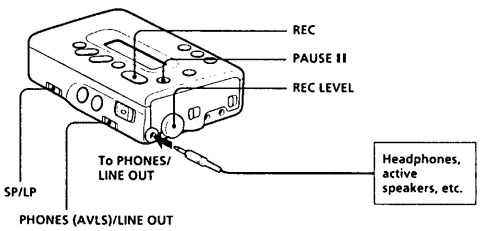
### Recording from audio equipment with digital output (Digital connection)




1 Use and connect the optical cable or coaxial cable according to the digital output jack of the connected equipment.
2 Set the switch of the connecting cable to DIGITAL.
3 Press the REC and PAUSE II buttons.
4 Press either the PLAY ► or PAUSE II button to begin recording. Then, begin playback of the connected source.

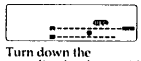


## Useful Recording Functions




**Notes**

- It is impossible to adjust the recording level manually in the digital connection.
- Recording level is set excessively high when OVER appears in the right side of the peak level indicator.



Turn down the recording level to avoid distortion.

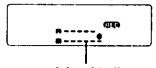
**Notes**

- A tape recorded in the LP mode cannot be played back on a DAT deck which is not equipped with the LP mode function.
- A loud noise may be heard during the transition from the SP mode to the LP mode when a tape containing a recording that has been switched from the SP mode to the LP mode halfway, is played back on a DAT deck which is not equipped with the LP mode function. In this case, turn down the volume or stop playback.

### Adjusting the recording level manually—Manual recording

For optimum recording with microphones or from analog audio equipment, adjust the recording level manually.

1 Set the REC MODE switch to MANUAL.
2 Press the REC button to enter the recording monitor mode.
3 Begin playback of the source and turn the REC LEVEL control to adjust the recording level while monitoring the sound.




Turn the REC LEVEL control so that the peak level indicators are maintained around level ⓬ of the peak level meter.
Make sure that OVER does not appear when a loud sound is input.

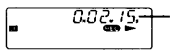
4 Press the PLAY ► button while pressing the REC button to begin recording.

### Recording in the Long Play mode—LP REC

Set the SP/LP switch to LP to record twice the recording time of conventional DAT cassettes. Accordingly, a 60-minute DAT cassette recorded in the LP mode enables recording of 120 minutes.

### Tape counter display during LP mode

The absolute time and the remaining time of the tape are based on the SP mode. Therefore, the actual time is twice the amount of the value shown on the display.




### Recording blank segment—REC MUTE

A blank (unrecorded) segment can be inserted at the beginning of the program (track) and between programs (tracks). In this case, the Start ID is not written.

1 Press the REC button and the PAUSE ❚❚ button to enter the recording pause mode.

2 Press the PAUSE ❚❚ button while pressing the REC button.

A four-second blank segment is inserted and the unit returns to the recording pause mode automatically.

### Monitoring the recording

Use the headphones or speakers of the stereo unit to monitor the sound while recording.

1 Plug the headphones or stereo unit to the PHONES/LINE OUT jack of the tape-corder.

2 Set the PHONES (AVLS)/LINE OUT switch as shown below.

| Connected audio equipment | Position of switch |
|---|---|
| Headphones | ∩ AVLS OFF or ON |
| Stereo unit (via LINE IN) | LINE OUT |

3 Begin recording.

Noise may be heard in the monitor sound when recording in digital connection. This is not a malfunction and the noise is not recorded.

**Tip**

To insert a blank segment of 4 seconds or more, press the PAUSE ❚❚ button while pressing the REC button, and then hold down the PAUSE ❚❚ button only for 4 seconds or more. The tape-corder enters the pause mode when the PAUSE ❚❚ button is released.

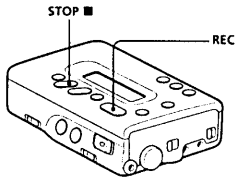
**Notes**

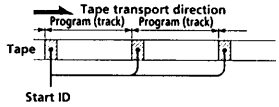
- When a plug is connected to the PHONES/LINE OUT jack, the tape-corder cannot change the output mode from LINE OUT to PHONES (AVLS) during recording although you can set the PHONES (AVLS)/LINE OUT switch to PHONES (AVLS), vice versa. Stop recording or disconnect the plug from the jack and set the PHONES (AVLS)/LINE OUT switch.
- The volume will be very loud when using the headphones to monitor the sound while recording if the PHONES (AVLS)/LINE OUT switch has set to LINE OUT.



## Writing Start ID

The Start ID is a signal which indicates the beginning of a program (track). The tape-corder searches the Start IDs to locate the beginning of a program (track) with the AMS (Automatic Music Sensor) function.




**Tip**

To write the Start ID during recording, press the REC button. The Start ID is written at the point where the REC button is pressed regardless of whether "AUTO-ID" is displayed or not.

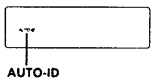
**Notes**

- The buttons except the STOP ■ button do not work while "START-ID" is flashing.
- When AUTO-ID is turned on, the Start ID may not be written properly if there is noise.
- When writing start IDs continuously, make sure that there is an interval of 9 seconds or more (18 seconds or more in the LP mode) between the start IDs. Otherwise, the tape-corder may not locate the beginning of a program (track) correctly.

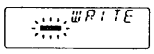
### Writing Start ID during recording

When AUTO-ID is turned on, the Start IDs will be written during recording on the basis of the output level of the source. When AUTO-ID is turned off, the Start-IDs will be written during recording on the basis of the existing ID information of the source.

1 Press the REC button while pressing the STOP ■ button so that "AUTO-ID" appears (to turn on AUTO-ID) or disappears (to turn off AUTO-ID).




2 Begin the recording. When the Start ID is written, "WRITE" appears for about two seconds, and then START-ID flashes for about 9 seconds (about 18 seconds in the LP mode).






### Writing Start ID when AUTO-ID is turned on

| Source | A Start ID is written when |
|---|---|
| All | • Recording begins or the recording pause is released. (During a soundless segment, Start ID is written at the point where sound is emitted.)<br>• A soundless segment or a segment with a very low recording level of 3 seconds or more.<br>• While sound is input the sampling frequency is changed.<br>• The REC button is pressed during recording. |

### Writing Start ID when AUTO-ID is turned off

| Source | A Start ID is written when |
|---|---|
| All | • Recording begins or the recording pause is released. (Start ID is written regardless of whether the segment contains a sound or not.)<br>• The REC button is pressed during recording. |
| CD player (digital input) | Identical to the existing program (track) information of the CD. (In addition to the above.) |
| DAT player (digital input) | Identical to the existing program (track) information of the DAT tape. (In addition to the above.) |

**Notes**

- When AUTO-ID is turned off, the existing program (track) information of the CD may not be written properly as the Start ID depending on the CD player in use.
- The existing program (track) information of the MD is not written as the Start ID.



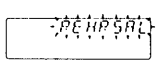
**Notes**

- Start IDs which are written during recording or which are written after selection, cannot be moved. Rewrite it after erasing.
- Start IDs cannot be written while START-ID flashes rapidly during the Rehearsal function.

### Writing Start ID during playback

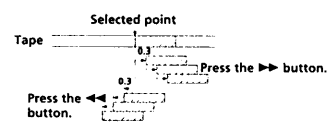
With the optional system adaptor kit RM-D3K or the wired remote control RMT-D7, you can write the Start ID without erasing the contents of the existing recording. (For more details, refer to the Operating Instructions manual that comes with each product.)

"REHRSAL" flashes when you select the point for Start ID, the tape-corder plays back the segment of the tape up to 3 seconds from the point and repeat it 16 times (Rehearsal function).




#### To adjust the selected point

Each time you press the ◀◀ or ▶▶ button of RM-D3K or RMT-D7, the selected point shifts backwards or forwards in 0.3-second increments, up to a maximum extent of about 10 seconds in either direction.



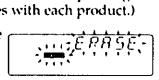

**Note**

If a Start ID is erased, the program number which is written on the same point will be erased also.

### Erasing Start ID

With the optional system adaptor kit RM-D3K or the wired remote control RMT-D7, you can erase the Start IDs without erasing the contents of the existing recording. (For more details, refer to the Operating Instructions manual that comes with each product.)

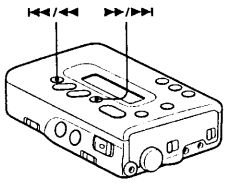
Erasing the Start ID is possible when the tape-corder is in the stop or playback mode only.



## Assigning Program Number

The program number is a signal which indicates the number of the program (track).

The program number is written at the same time as the Start ID.




**Note**

Writing and renumbering of the program number may not be completed successfully to the tape that has been recorded on another DAT deck and has a Start ID at the beginning.

**When recording from the beginning of the tape**

The program number is written automatically from number 1 in sequential order at the same time as the Start ID.

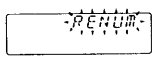
**When recording from the halfway of the tape**

Press the ►►/►►I or I◄◄/◄◄ button to display the program number before you begin recording. The program number is written in sequential order from the following program at the same time the Start ID is written.

**Renumbering the program number**

With the optional system adaptor kit RM-D3K or the wired remote control RMT-D7, you can renumber the program number. (For more details, refer to the Operating Instructions manual that comes with each product.)

"RENUM" flashes while the program number is renumbered. When the renumbering operation is completed, the tape-corder rewinds the tape to the beginning and enters the stop mode.



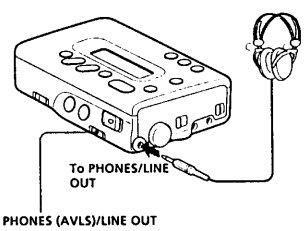

Renumbering is necessary to the following tape:

- On which the Start ID is written during playback.
- Which has missing program numbers or duplicated program numbers because the tape is recorded from the halfway of it.
- Which has a missing program number because the program number is erased at the same time a Start ID is erased on the tape.



## Useful Playback Functions

The AVLS* function is operational when using the headphones during playback or in the recording monitor mode.
The AVLS function keeps down the maximum volume to prevent excessive sound from harming your ears.



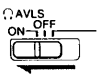

* Auto Volume Limiter System

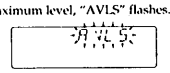
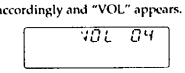
**Note**

The sound may be warped and distorted at times especially during enhanced bass segments when the AVLS function is operating. In this case, turn down the volume.

**Using AVLS function**

Set the PHONES (AVLS)/LINE OUT switch to ∩ AVLS OFF or ON when hearing the playback or recording monitor sound with the headpnones. The AVLS function operates when set to ON.




| AVLS switch | Volume and display |
|---|---|
| ON | The volume is restricted at a designated level. "AVLS" appears followed by "VOL" when the VOLUME button is pressed. When the volume is at maximum level, "AVLS" flashes.   |
| OFF | The volume is set to normal volume control. Each time you press the VOLUME buttons, the level of volume changes accordingly and "VOL" appears.   |





## Connecting with Other Equipment for Playback

You can connect the tape-corder to other analog audio equipment and audio equipment with digital output. Refer to page 12 for "Playing Back".

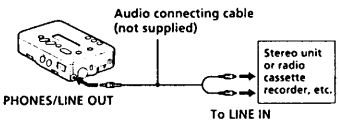
**Tip**

The output level of the PHONES/LINE OUT jack and the REMOTE DIGITAL I/O jack is fixed. The volume cannot be adjusted with the VOLUME buttons of this tape-corder.

**Note**

When a plug is connected to the PHONES/LINE OUT jack, the tape-corder cannot change the output mode from LINE OUT to PHONES (AVLS) during playback although you can set the PHONES (AVLS)/LINE OUT switch to PHONES (AVLS), vice versa.

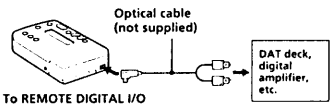
### Playback with an analog audio equipment (Analog connection)




1 Set the PHONES (AVLS)/LINE OUT switch to LINE OUT.

2 Begin playback and adjust the volume of the connected equipment.

### Playback with an audio equipment with digital input (Digital connection)



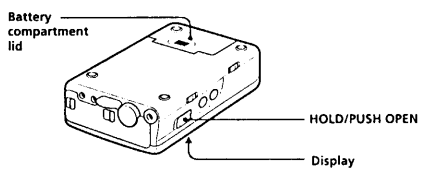

Connect the digital audio equipment to this tape-corder as shown. Begin playback and adjust the volume of the connected equipment.







## Replacing the batteries




**Tips**

- This tape-corder is not equipped with a power switch. As a result, the LCD display will always be turned on as long as the batteries are inserted. However, power consumption is minimal and negligible.
- Especialy when the tape-corder is in the low-power consumption mode, all indicators do not disappear in the display immediately after renowing the battery holder from the tape-corder. Cancel the low-power consumption mode before removing the battery holder. If the batteries are replaced before all indicators disappear in the display, the remaing battery power may not be displayed correctly.
- The clock will return to its default setting (SU/95Y1M1D/AM12H00M00S) if the batteries are removed from the tape-corder for one hour or more. In this case, set the clock again.

**Note**

Remove the batteries when the tape-corder is not to be used for an extended period of time.

1 Remove the battery holder. (See page 4.)

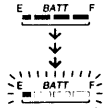
2 Replace the batteries with new ones in the battery holder. (See page 4.)

3 Make sure that all indicators disappear in the display.

4 Insert the battery holder into the tape-corder and close the lid. (See page 4.)

**When to replace the batteries**

The status of the remaining battery power is displayed when the batteries are used.




Battery full.

Replace all four batteries with new ones.
"bATTERy" flashes and the tape-corder enters the stop mode when used beyond this point.

**Battery life** (Approx. hours)

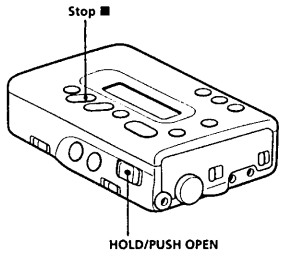
| Battery | Playback | Recording (in the recording monitor mode) |
|---|---|---|
| Sony alkaline (size AA) | 3.5 | 3 (4*) |
| Sony rechargeable (size AA) | 2 | 1.5 (2*) |

Values for battery life at 20°C.
Battery capacity decreases and battery life becomes shorter in low temperatures.

* When no plug is connected to the PHONES/LINE OUT jack.

## Low-power Consumption Mode

If the tape-corder remains in the stop mode for 3 minutes or more, it will enter the low-power consumption mode automatically to conserve the battery.




**Tips**

The tape-corder does not enter the low-power consumption mode when you operate it with the AC power adaptor or car battery.

The tape is unloaded automatically to protect the tape and the tape-corder enters the low-power consumption mode to conserve the battery when the tape-corder is in the stop mode for 3 minutes or more. The clock display appears and the display light turns off in the low-power consumption mode.

### To enter the low-power consumption mode manually

1 Make sure that the tape-corder is in the stop mode.

Press the STOP ■ button if the tape-corder is in the pause mode.

2 Slide the HOLD/PUSH OPEN switch to HOLD.

The tape-corder enters the low-power consumption mode.



► Additional Information

## Connecting with Other Equipment

Connect other equipment to this tape-corder to enable flexible use of the tape-corder.

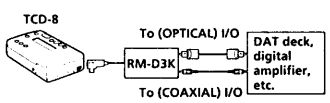
**Note**

When using the optional RM-D3K, operate this tape-corder with the AC power adaptor.
With the batteries, wireless remote control functions and digital input/output connections may not operate properly.

### Using the optional system adaptor kit RM-D3K

The optional RM-D3K functions as a relay unit between an equipment with digital I/O jack and this tape-corder.

The RM-D3K supports input/output of both optical and coaxial cables. Connect according to the jack of the digital audio equipment you wish to connect.

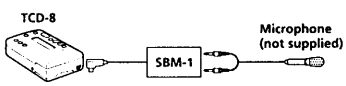



### When the RM-D3K is connected

Writing and erasing Start IDs, renumbering program numbers, and using the Music Scan function or Direct Search function are many of the noteworthy features of the RM-D3K.

### Using the optional super bit mapping adaptor SBM-1

The optional SBM-1 enables recording of higher quality when connected to this tape-corder.




**Note**

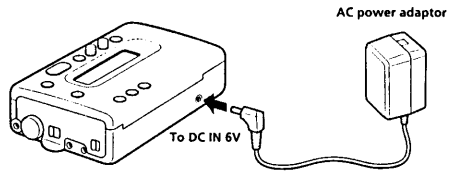
When operating the optional SBM-1 with AC power adaptor, power is supplied from this tape-corder if the power of the SBM-1 is turned off.
When this tape-corder is operated with batteries, disconnect the AC power adaptor from the SBM-1 to conserve the battery.

### Using the optional wired remote control RMT-D7

The optional RMT-D7 can be connected to the SBM-1 to enable remote control. However, when operating the SBM-1 with the batteries, the RMT-D7 is not operational if the power of the SBM-1 is turned off. When operating the SBM-1 with the AC power adaptor, the RMT-D7 is operational regardless of whether the power of the SBM-1 is turned on or off.



## Operating with the AC Power Adaptor or Car Battery






**Tips**

- When the AC power adaptor or the car battery cord is connected to the DC IN 6V jack of the tape-corder, the internal batteries are automatically disconnected. Power is automatically supplied from the external power source. The tape-corder works with the external power source, not the internal batteries.
- When the AC power plug or the car battery cord is used for an extended period of time, the internal temperature of the tape-corder may rise. This is not a malfunction.

### Using the AC power adaptor

Connect the supplied AC power adaptor to the DC IN 6V jack.

### Notes on the AC power adaptor

- Use only the supplied AC power adaptor or the optional AC-E60HG/AC-E60AM AC power adaptor. Do not use any other AC power adaptor.

Polarity of the plug

- Make sure that the cassette compartment lid is closed before disconnecting the AC power adaptor or removing the batteries. Otherwise, the cassette compartment lid may not close if the power source is disconnected or removed while the cassette compartment lid is open. In this case, connect the power adaptor or insert the batteries again.

### Using the car battery

To operate the tape-corder with the car battery, connect the car battery cord Sony DCC-E260XL (not supplied) to the DC IN 6V jack of the tape-corder. For more details, refer to its Operating Instructions manual.



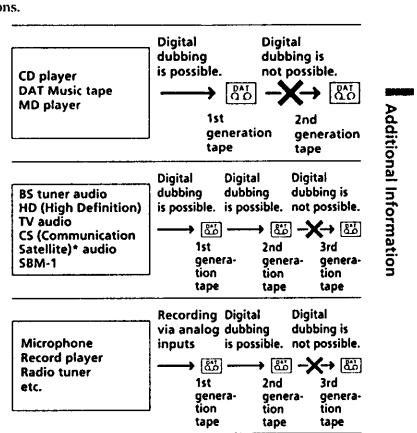
## Serial Copy Management System (SCMS)

The Serial Copy Management System (SCMS) which is incorporated in the domestic DAT equipment prevents repeated digital dubbing from one equipment to another. However, this system lets you record at least one generation of digital prerecorded software via digital connections.

**Notes**

- There may be cases where the Serial Copy Management System rules are not applicable when the equipment which is not protected with the Serial Copy Management System is used in recording.
- Even if digital dubbing is impossible, you can still dub tape via analog connections.
- When digital dubbing is not possible, the message "COPy PROHIbT" will appear in the display.

* These source examples may not apply to some countries.



## Message Display

The following messages will be displayed while operating this unit.

| Message | Description |
|---|---|
| HOLD | Flashes for about one second when you set the HOLD/PUSH OPEN switch to HOLD. Appears when you press a button while the HOLD function is operating. |
| NO TAPE | Flashes when there is no tape inside the unit. |
| TAPE · PROTECT | TAPE, PROTECT indicators appear alternately when the REC button is pressed or when writing/erasing a Start ID in the playback mode using a tape whose record-protect shutter is open. |
| No INPUT | Flashes when the digital input signal is not received. |
| COPY · PROHIBT | COPY and PROHIBT indicators appear alternately when the SCMS signal is received. |
| OPEN | Flashes when the cassette door is open. |
| LOAD | Flashes while loading a tape. |
| UNLOAD | Flashes when unloading a tape. |
| TOP | Flashes when the beginning of a tape*1 is reached. |
| END | Appears when the end of the tape is reached. |
| LINEOUT | Flashes when the PHONES (AVLS)/LINE OUT switch is set to the LINE OUT position and the VOLUME button is pressed. |
| BATTERY | Flashes when the batteries are weak. |
| EE END | Appears when the End ID*2 is detected. (except for the tape playback) |
| BLANK | Flashes when the unrecorded part of a tape is detected during playback or fast-forwarding. |
| WRITE | Appears while the Start IDs are being written. |
| MIC in or LINE in | Appears when a microphone/audio connecting cable is connected to the tape-corder in the recording, recording pause, and recording monitor modes. Also appears when the REC button is pressed in the recording pause or recording monitor mode.*3 |
| DIGITAL | Appears when the REC button is pressed in the recording pause or recording monitor modes while another equipment is connected via the digital connection. |
| AVLS | Flashes when the AVLS is set to ∩ AVLS ON, or when the AVLS is set to ∩ AVLS ON and the VOLUME button is pressed. |

*1 Flashes when a new (virgin) tape is used for the first time.

*2 The End ID is a signal which indicates the position of a tape where the recording has ended. You cannot register the End IDs with this unit, however the unit can play back the tapes which are registered with the End IDs and detect them. When the unit detects an End ID during fast forward, it stops there. You can only forward the tape by recording from that point. When the unit detects an End ID during playback, it enters the auto-rewind mode.

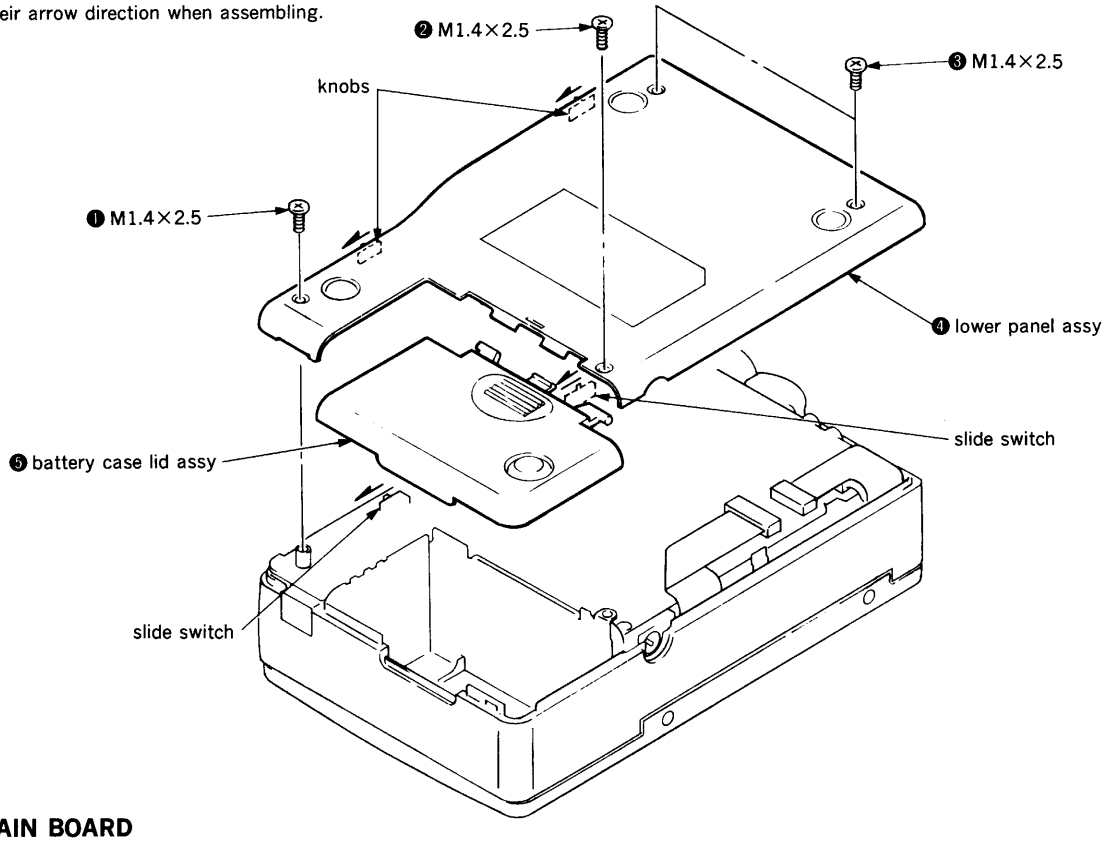
*3 If both of a microphone and an audio connecting cable are connected, a microphone has priority over audio connecting cable, therefore, "MIC in" appears. When a microphone is disconnected "LINE in" appears.

# SECTION 2
# DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.

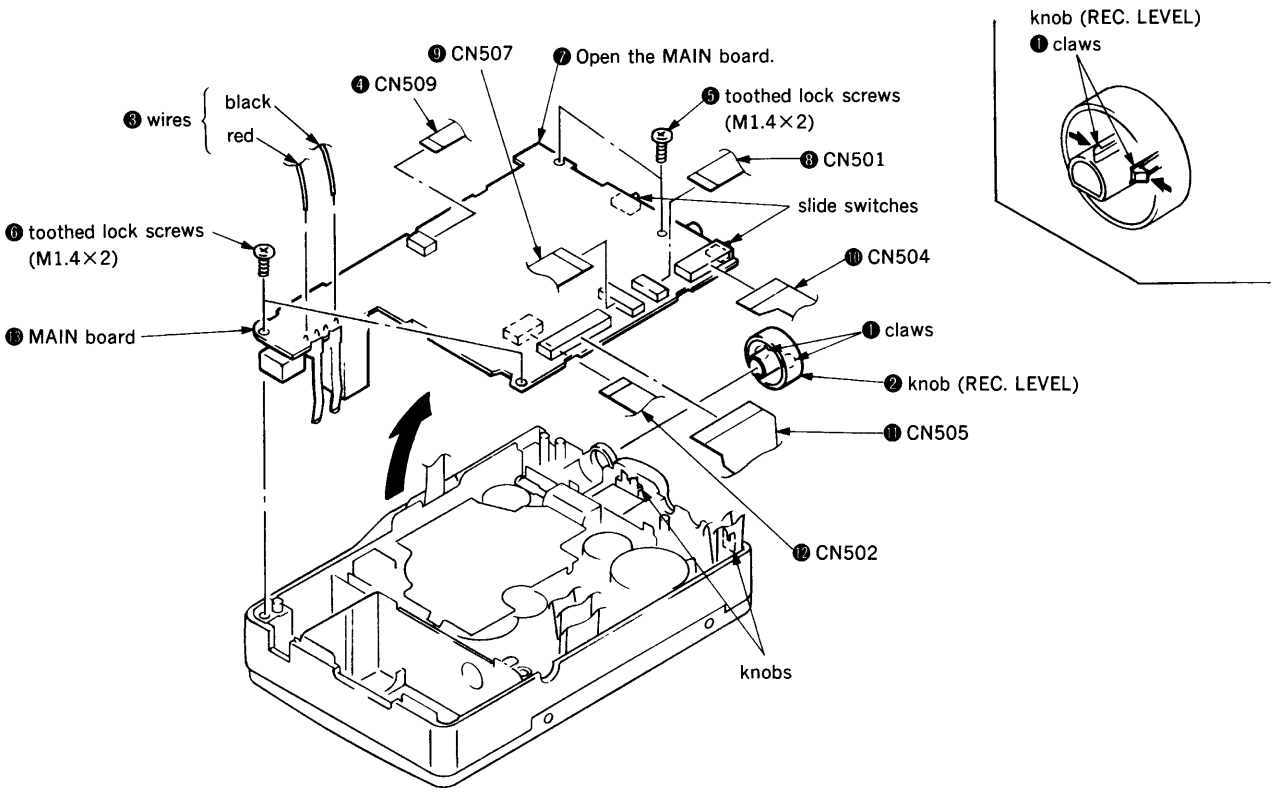
## 2-1. LOWER PANEL ASSY

**Note)** Move the two knobs and the slide switches in their arrow direction when assembling.

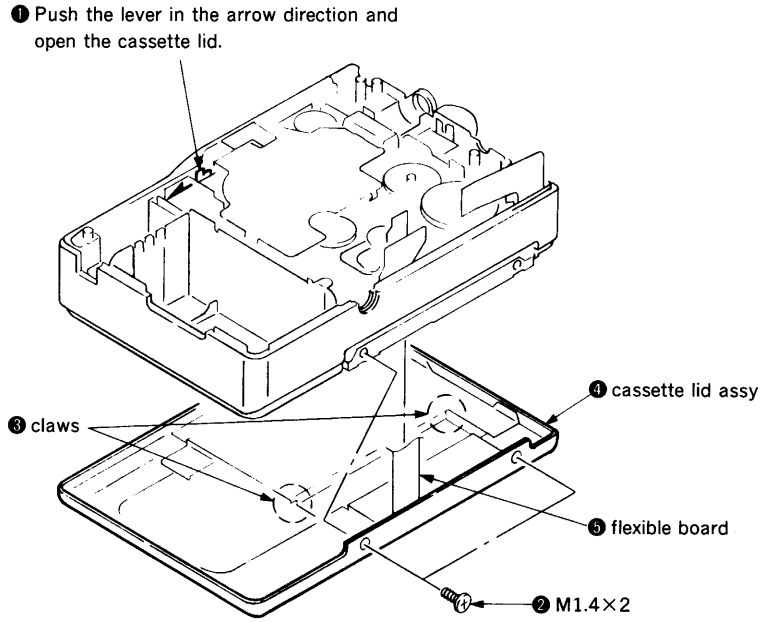



## 2-2. MAIN BOARD

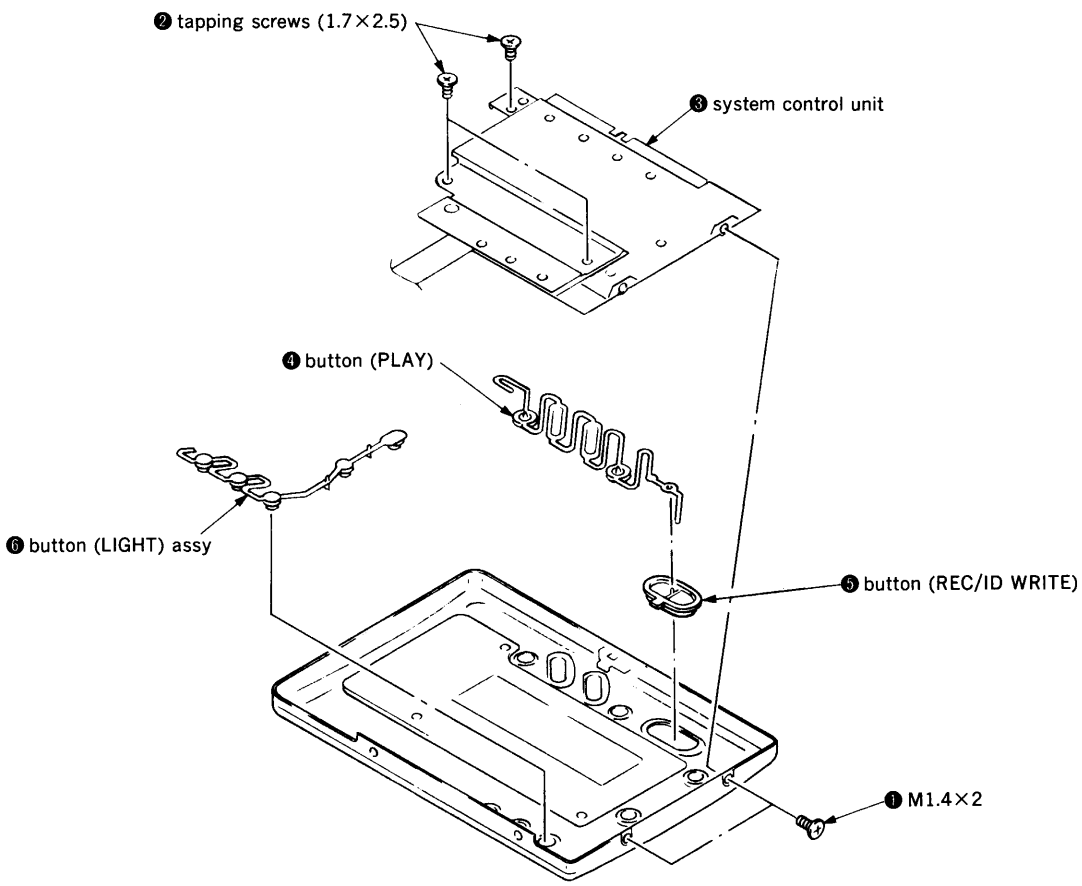
**Note)** Fit the two knobs and the slide switches in position when assembling.



## 2-3. CASSETTE LID ASSY

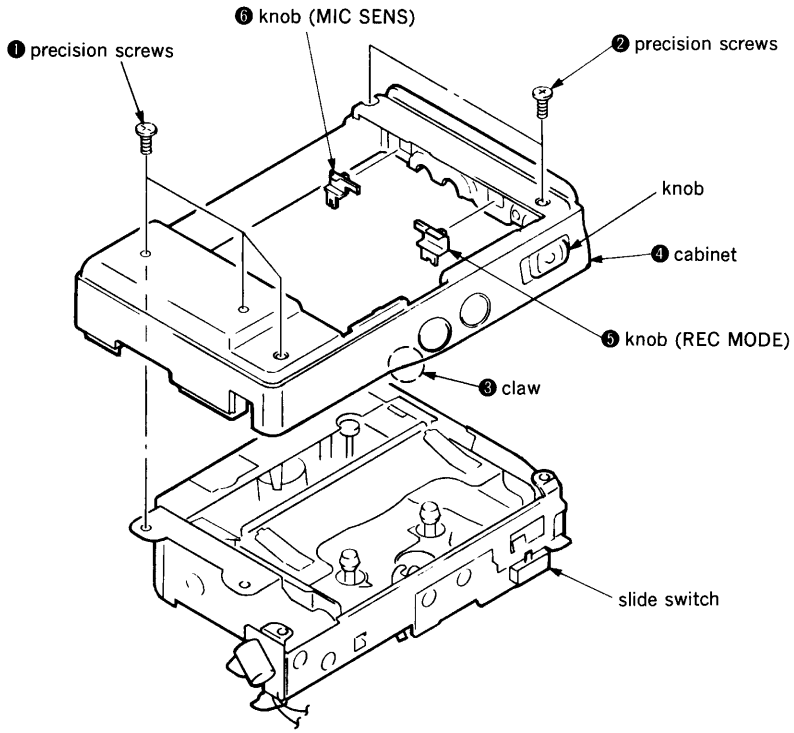



## 2-4. SYSTEM CONTROL UNIT

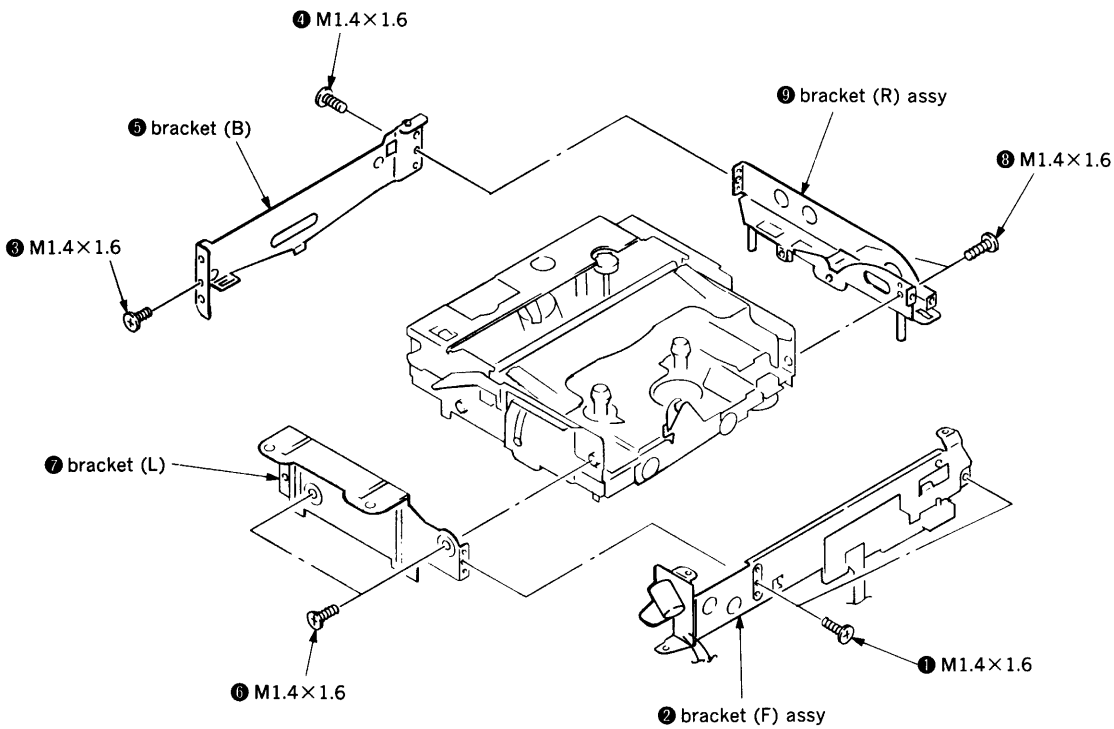


## 2-5. CABINET

**Note)** Fit the knobs and the slide switches in position when assembling.

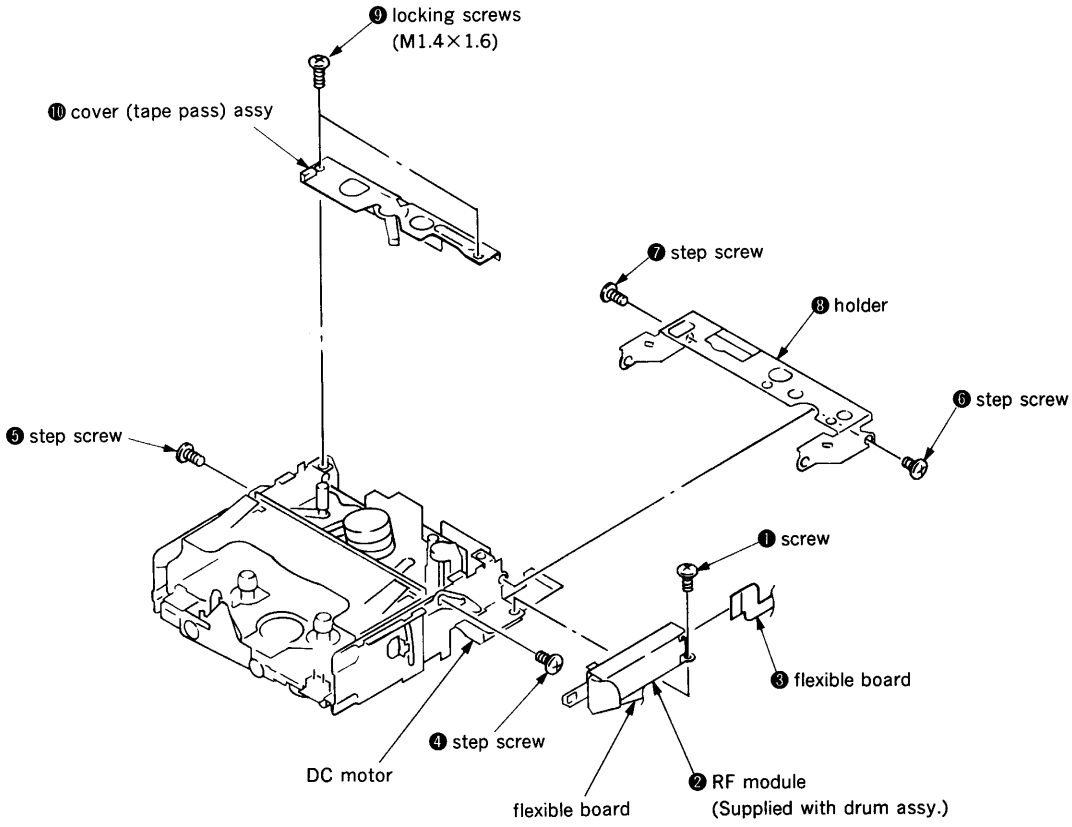



## 2-6. BRACKET

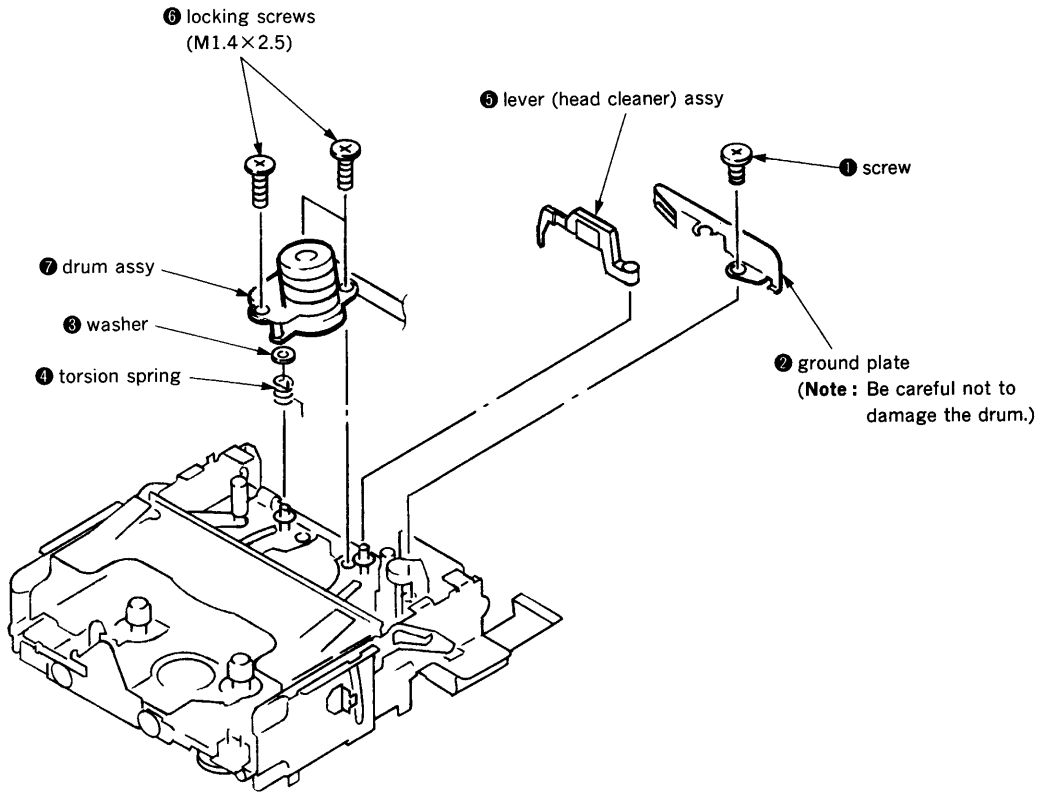


## 2-7. COVER (TAPE PASS) ASSY

When installing, make sure that the flexible board of the RF module is in between the DC motor and the chassis.




## 2-8. DRUM ASSY



# SECTION 3-1
# ADJUSTMENTS

## NOTES FOR ADJUSTMENT

1. The adjustments should be performed in sequence that they are described.

2. Use the following test tapes:
   TY-7111 (8-909-812-00) for level
   TY-7915 (8-913-932-00) for tape path and SWP
   TY-30B (8-892-358-00) blank tape
   Use the following torque meter:
   TW-7131 (8-909-708-71) for FWD and back tension

3. Set the switch and control to the following positions:
   LP/SP (S501) ·····SP
   HOLD (S704) ·····Released side (in the opposite of → position)

4. Apply 6.0Vdc from the DC IN jack as power supply.

5. For cleaning of the drum, use the chamois leather (2-034-697-00) or four folds of cloth (knitted fabric) wetted with a little amount of alcohol and lightly apply it onto the drum. Then rotate the drum counterclockwise (two to three turns) to clean it.

## TEST MODE

1. Enter the Test Mode before performing adjustment.

2. With the power ON, simultaneously press the STOP key, COUNTER key and OPEN button on the set to enter Test Mode. Turn the power OFF to release the Test Mode.

3. When the Test Mode is set, the LCD back light will be lit and the following initial display will appear. Also, the mechanism will be put in the loading state and the segments of the Selected Test Mode Code on the LCD display will be flashing (continuously).

   LCD Initial Display

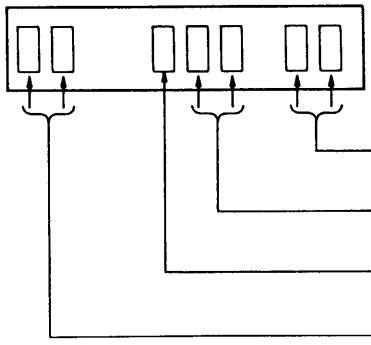
**Note:** During the Test Mode, each key on the set is available to operate it. In this case, malfunction may occur, but it will be released by pressing ■ key on the set. Also, this malfunction will not cause any damage to tape.

4. Types of Test Modes

| Test Mode Code | Contents |
|---|---|
| 01 | Normal operation mode |
| 02 | Error rate measurement mode |
| 30 | End sensor check mode |
| 40 | Mechanism single operation mode |
| 41 | Not used. |
| 42 | Tape path adjustment mode |

5. Setting of Test Mode Code (remote commander MDR-ED7 is required.)

• Test Mode Display



**Note :** During the Test Mode, the display is switched by pressing the COUNTER key on the set. Select the Test Mode display to check the current Test Mode.

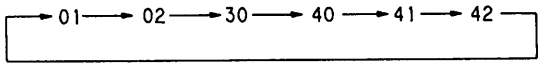
Set Test Mode Code ·····Segments illuminated.

Selected Test Mode Code ·····Segments flashing.

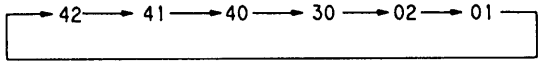
Capstan speed code ·····Capstan speed displayed in test codes 40 and 42.

Error code ·····Segments displayed in case of emergency in test mode.

1) Each time ▶▶ key on remote commander is pressed, the segment value of the Selected Test Mode Code changes as follows :




2) Each time ◀◀ key on remote commander is pressed, the segment value of the Selected Test Mode Code changes is reverse order from the above order.




3) Set the Test Mode Code by pressing ▶ key on remote commander. (After this setting is completed, the Selected Test Mode Code is flashing.)

6. Description of Test Mode Codes

01·····Normal operation mode

This mode produces the same state as the state of the set where the Test Mode is not entered. However, malfunction may occur. So when checking the set in normal operation, do without entering the Test Mode.

02·····Error rate measurement mode

An error rate counter is needed to measure the error rate. Therefore, this mode is not used for servicing.

30·····End sensor check mode

Check without tape.

If an end sensor fault is detected, the error code 13 (T reel side fault) or 14 (S reel side fault) will be displayed continually.

40·····Mechanism single operation mode

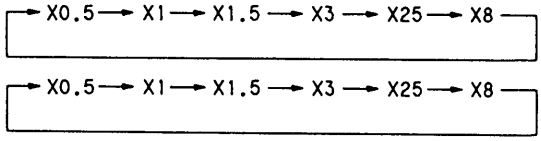
This mode is available whether tape is present or not.

Without tape, tape end and reel error detections are not performed but holder lock detection is performed.

With FF/REW and ×25FWD/×25REV selected, constant voltage drive is activated without tape while servo is activated with tape.

Press VOL (+) key on remote commander.····· (FWD mode)

Press VOL (−) key on remote commander.····· (REV mode)




| Capstan Speed Code Display | Capstan Speed | Drum Speed |
|---|---|---|
| 1 | ×0.5FWD | 1000rpm |
| 2 | ×1FWD | 2000rpm |
| 3 | ×1.5FWD | 2000rpm |
| 4 | ×3FWD | 2000rpm |
| 5 | ×25FWD | 2000rpm |
| 6 | ×8FWD | 2000rpm |
| −1 | ×0.5REV | 1000rpm |
| −2 | ×1REV | 2000rpm |
| −3 | ×1.5REV | 2000rpm |
| −4 | ×3REV | 2000rpm |
| −5 | ×25REV | 2000rpm |
| −6 | ×8REV | 2000rpm |

41·····Constant voltage drive mode

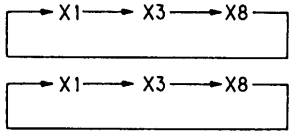
Not used.

42·····Tape path adjustment mode

This mode displays the capstan speed and it is effective only when tape is mounted.

Press VOL (+) key on remote commander.····· (FWD mode)

Press VOL (−) key on remote commander.····· (REV mode)




| Capstan Speed Code Display | Capstan Speed | Drum Speed |
|---|---|---|
| 1 | ×1FWD | 2000rpm |
| 2 | ×3FWD | 2000rpm |
| 3 | ×8FWD | 2000rpm |
| −1 | ×1REV | 2000rpm |
| −2 | ×3REV | 2000rpm |
| −3 | ×8REV | 2000rpm |

7. Error Code List

| Code No. | Block | Contents |
|---|---|---|
| - - | | No error (no emergency) |
| 01—09 | Control motor (encoder) | Unable to detect the position*1 |
| 10 | Mechanism deck | Loading not completed |
| 11 | | Unloading not completed |
| 12 | | No eject |
| 13 | | End sensor fault (T side) |
| 14 | | End sensor fault (S side) |
| 15 | | DEW detected |
| 20 | Drum | Drum motor won't rotate |
| 21 | | Drum servo not locked |
| 30 | Capstan | Capstan motor won't rotate |
| 31 | | Speed not locked |
| 40 | Reel | T reel FG not detected |
| 41 | | S reel FG not detected |
| 42 | | Measure abnormally ended |

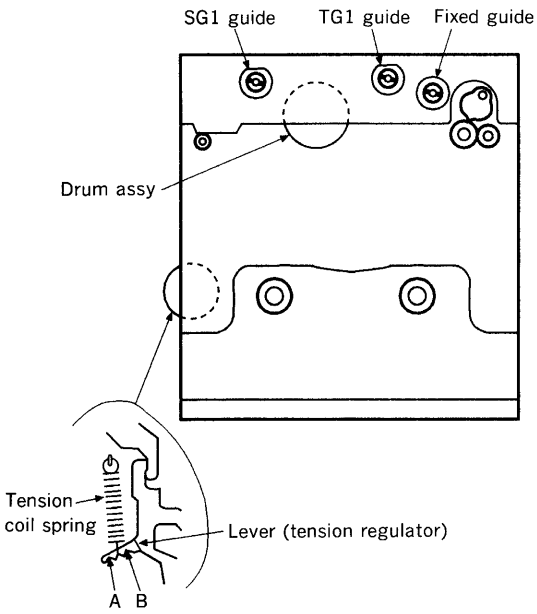
* 1 If the position of the rotary encoder is not detected, the position number for that position is preceded with 0 and this value is displayed as the error code. (See below)

| | | | | | |
|---|---|---|---|---|---|
| EJECT | : 01 | Load | : 04 | FF | : 07 |
| Unload | : 02 | REV | : 05 | STOP | : 08 |
| CASIN | : 03 | FWD | : 06 | REW | : 09 |

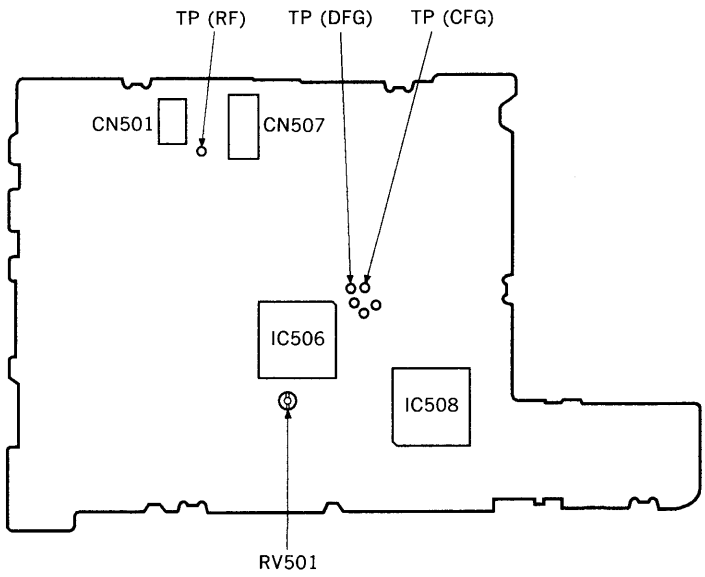
If an emergency occurs during each test mode, the error code will be displayed.

**LOCATIONS OF PARTS ASSOCIATED WITH ADJUSTMENTS**

**—MECHANISM—**




**—MAIN BOARD—**




# SECTION 3-2
# MECHANICAL ADJUSTMENTS

These adjustment should be always performed when the drum was replaced.

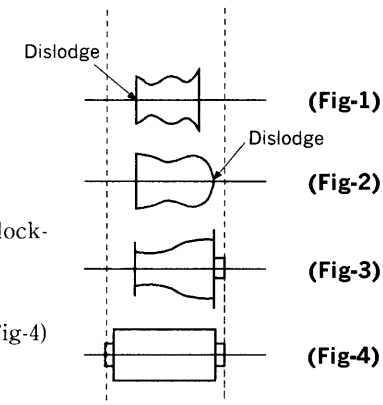
## TAPE PATH ADJUSTMENT

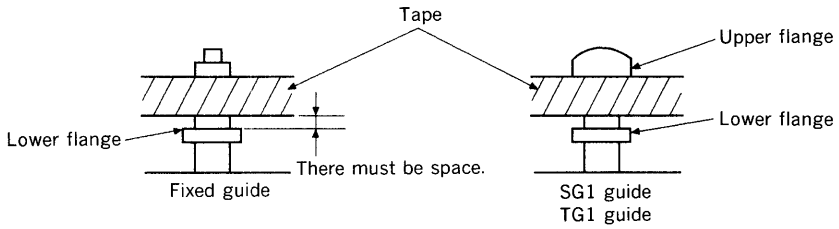
※ Only when checking the tape path, perform Items 6 to 9.

1. Enter the Test Mode, mount test TY-7915, and set tape near the center.
2. Set test mode code 42 and press VOL (+) key on remote commander. (×1FWD)
3. Lower SG1 guide (clockwise) and dislodge tape (Fig-1).
4. Lower TG1 guide (clockwise) and dislodge tape (Fig-2). Then, turn TG1 guide counterclockwise and adjust so that the right edge of the RF waveform (Fig-3) is at right angle.
5. Turn SG1 guide counterclockwise and adjust so that the left edge of the RF waveform (Fig-4) is at right angle.

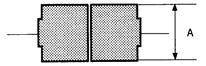
   At this time, the lower flange of fixed guide should not be in contact with tape.
   Also, tape should run along the upper flanges of SG1 and TG1 guides.

**—RF WAVEFORM—**

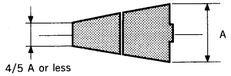


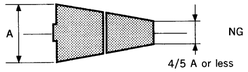
6. Check the RF waveform and fine adjust SG1 and TG1 guides.




**(Fig-5)**



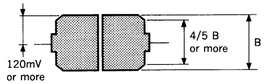

NG **(Fig-6)** ⇨ Fine adjust SG1 guide so as to obtain the waveform as shown in Fig-5.




NG **(Fig-7)** ⇨ Fine adjust TG1 guide so as to obtain the waveform as shown in Fig-5.

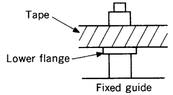
**Note :** SG1 guide and TG1 guide should not be adjusted alternately. After one guide has been adjusted, the other guide should be adjusted.

7. 1) Press STOP button, then press OPEN button to take out tape once.
   2) Mount tape again and press VOL (+) key on remote commander to select ×1FWD.
   3) Check the peak value and width of variation of the RF waveform.




   4) If the RF waveform does not satisfy the check values, repeat Items 6 to 7.

8. Press VOL (+) or VOL (−) key on remote commander to select ×1FWD or ×1REV.
   Adjust the fixed guide so that the lower flange of the guide is positioned along tape. (No tape curl should be present.)




9. After performing ×8FWD, ×8REV, ×3FWD, and ×3REV operations, confirm that the RF waveform is state.



## TORQUE CHECK

Preparation :
Remove the cassette lid from the cassette holder.

(×1FWD)
1. Set the Test Mode.
2. Set test mode code 40.
3. Mount torque meter TW-7131.
4. Press VOL (+) key on remote commander to select ×1FWD mode.
5. Check the torque meter.

   FWD take-up torque 4.5—7.0g•cm (0.063—0.097oz•inch)
   FWD back tension 3.0—5.5g•cm (0.042—0.076oz•inch)

6. If the back tension check value is not satisfied, place the tension coil spring set to the lever (tension regulator) to position either A or B. Check the back tension again.

(×1REV)
1. Perform the above items 1 to 3.
2. Press VOL (−) key on remote commander to select ×1REV mode.
3. Check the torque meter.

   REV take-up torque 5.5—11.0g•cm (0.077—0.152oz•inch)
   REV back tension 6.0—12.0g•cm (0.084—0.166oz•inch)



## SPEED CHECK

(Capstan FG)
1. Connect frequency counter to TP (CFG).
2. Set the Test Mode.
3. Set test mode code 40.
4. Mount test tape TY-30B.
5. Press VOL (+) key on remote commander and read the frequency in ×0.5FWD, ×1FWD, ×1.5FWD, ×3FWD, and ×8FWD modes.

| Mode | Frequency |
|---|---|
| ×0.5FWD | 296Hz±5Hz |
| ×1FWD | 592Hz±5Hz |
| ×1.5FWD | 888Hz±3Hz |
| ×3FWD | 1776Hz±3Hz |
| ×8FWD | 4736Hz±5Hz |

(Drum FG)
1. Connect frequency counter to TP (DFG).
2. Perform the above Items 2 to 4.
3. Press VOL (−) key on remote commander and check the frequency in ×0.5FWD and ×1FWD.

| Mode | Frequency |
|---|---|
| ×0.5FWD | 400Hz±1Hz |
| ×1FWD | 800Hz±1Hz |



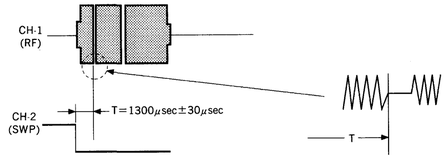
# SECTION 3-3
# ELECTRICAL ADJUSTMENTS

These adjustment should be always performed when the drum was replaced.

## SWP (SWITCHING PULSE) ADJUSTMENT

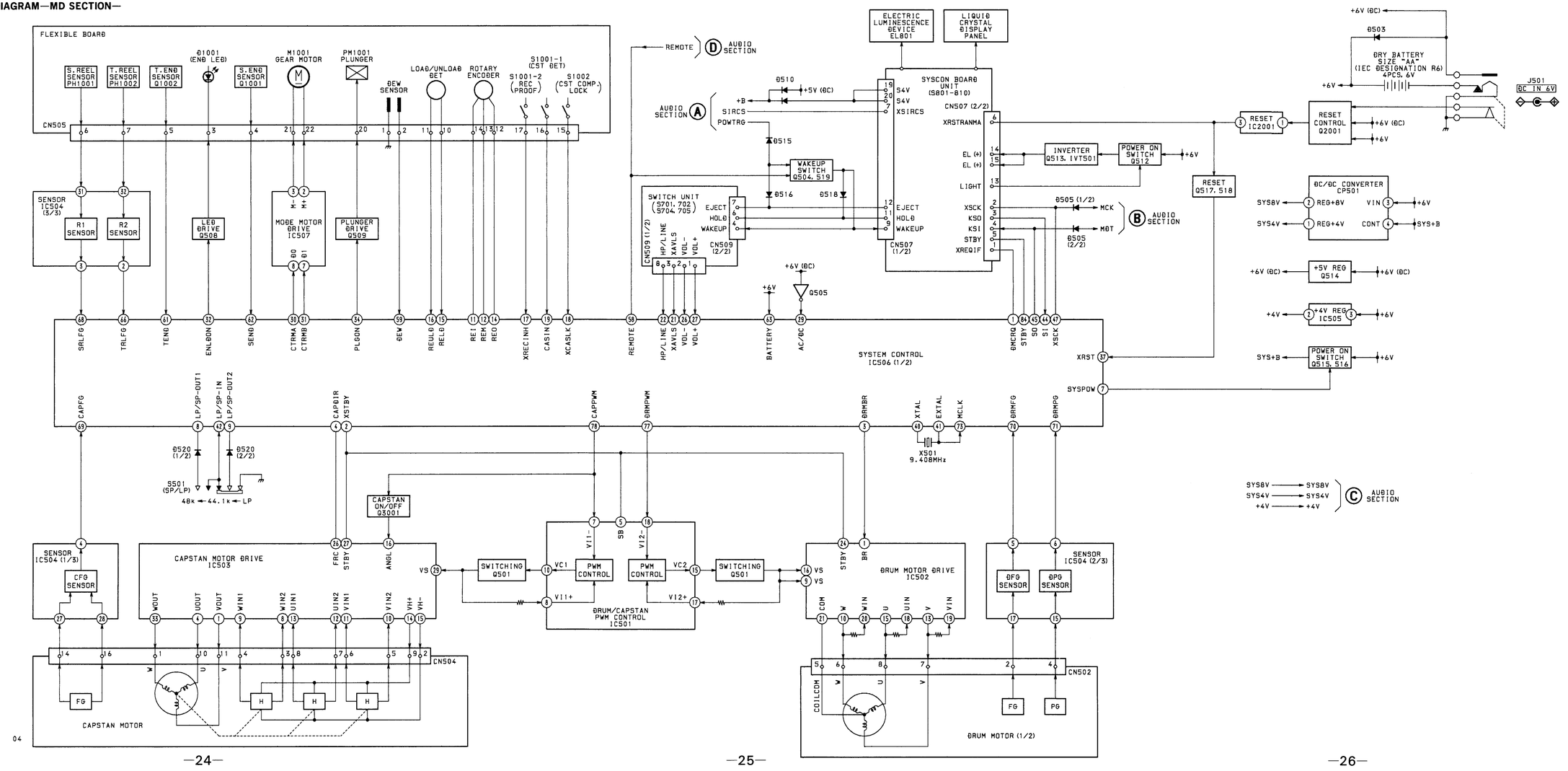
Preparation : Oscilloscope CH-1 : AC 100mV/DIV
CH-2 : DC 2V/DIV
TRIG : CH-2

1. Connect CH-1 of oscilloscope to TP (RF) and CH-2 to CN501 pin ⑧ (SWP).
2. Set the Test Mode.
3. Set test mode code 42.
4. Mount test tape TY-7915.
5. Press VOL (+) key on remote commander to select ×1FWD.
6. Use RV501 to adjust the period (T) between SWP waveform and RF waveform.



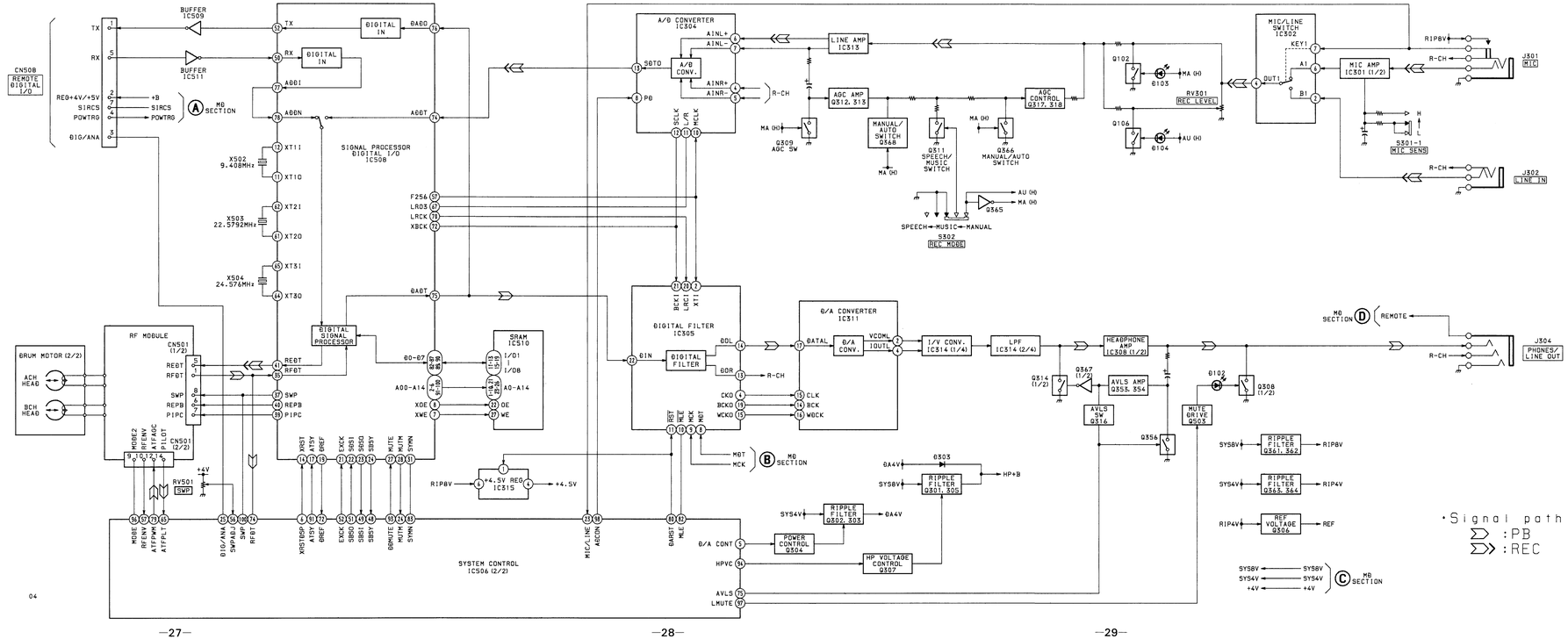
# SECTION 4
# DIAGRAMS

## 4-1. BLOCK DIAGRAM—MD SECTION—



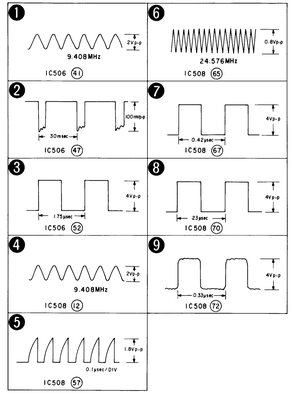

04

## 4-2. BLOCK DIAGRAM—AUDIO SECTION—




• Signal path
▷ : PB
▷▷ : REC

• Waveforms



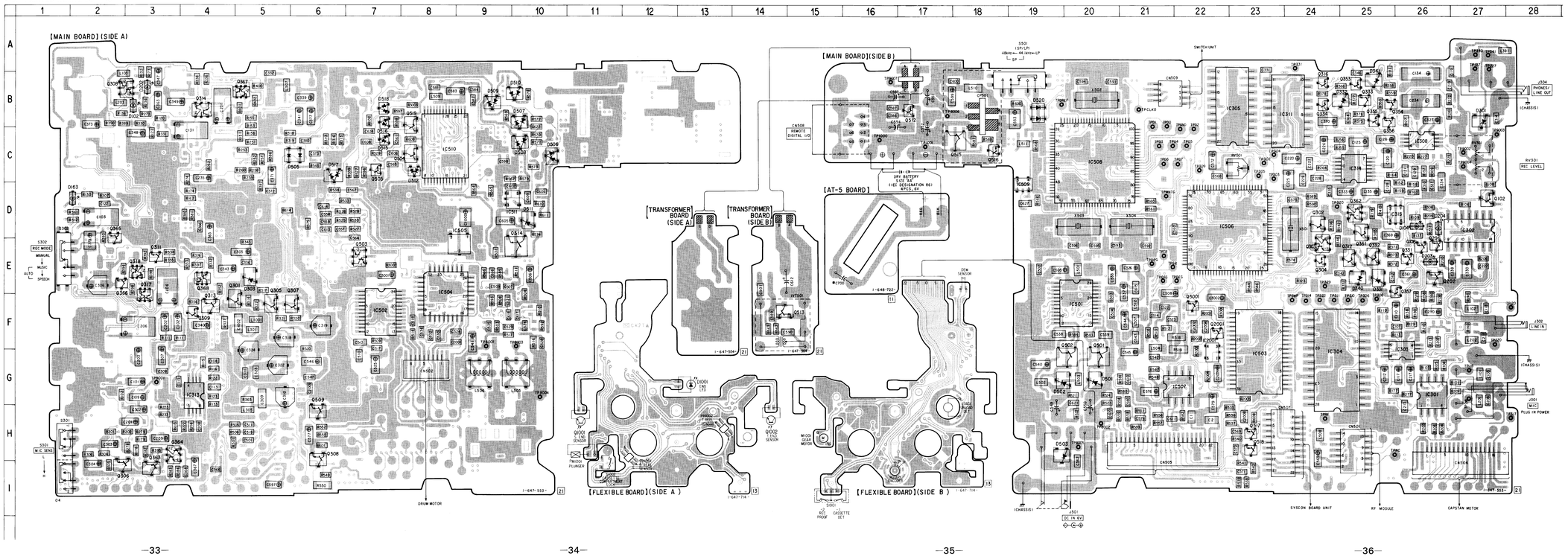
## 4-3. PRINTED WIRING BOARDS

● Semiconductor Location

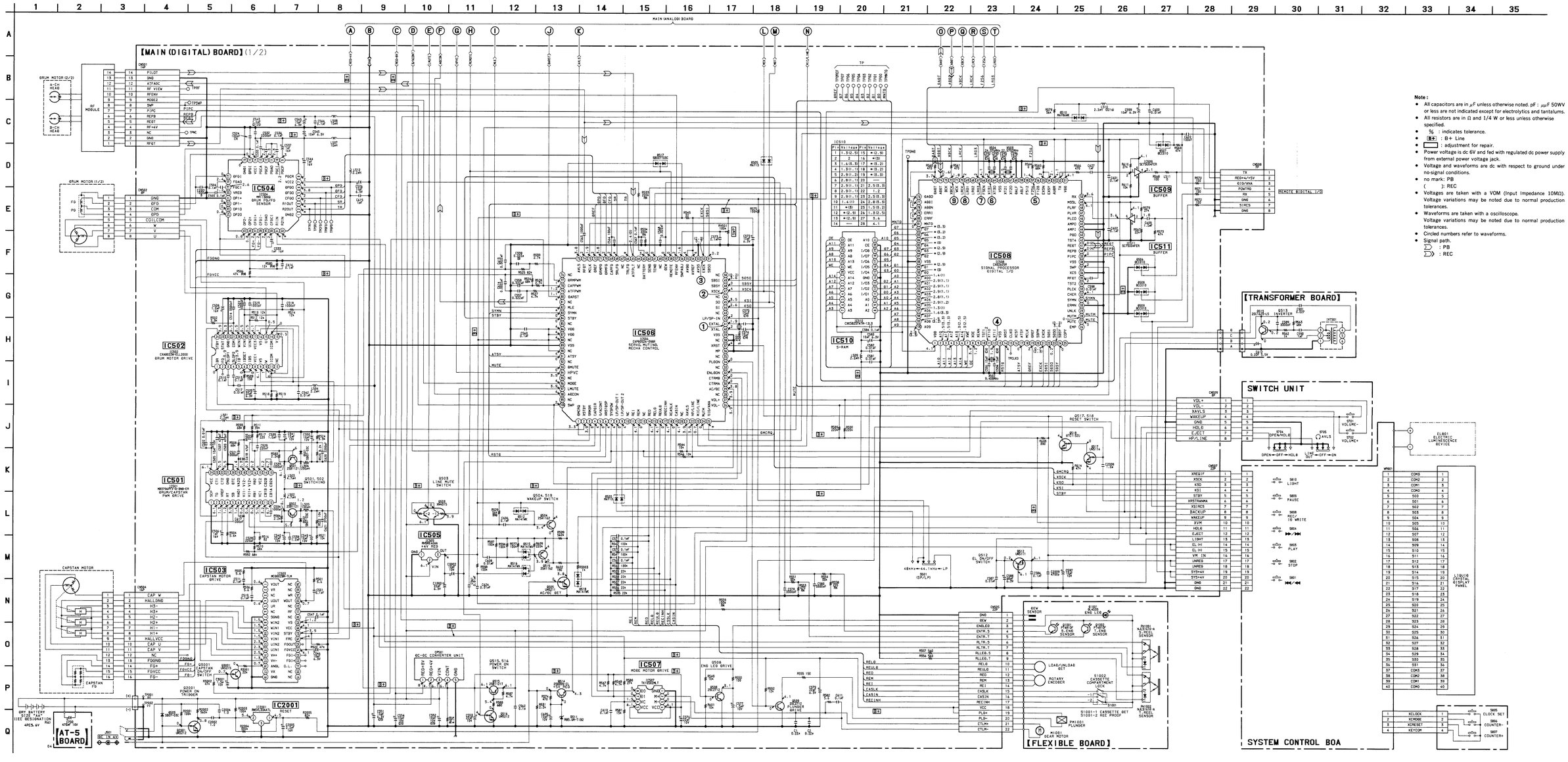
| Ref. No. | Location | Ref. No. | Location |
|---|---|---|---|
| D102 | B-3 | Q106 | E-26 |
| D103 | D-2 | Q202 | E-26 |
| D104 | D-26 | Q206 | E-26 |
| D202 | B-3 | Q301 | E-4 |
| D203 | E-26 | Q302 | D-24 |
| D204 | D-26 | Q303 | E-24 |
| D301 | B-27 | Q304 | E-24 |
| D303 | E-5 | Q305 | E-5 |
| D331 | E-25 | Q306 | I-2 |
| D332 | B-24 | Q307 | E-5 |
| D340 | E-25 | Q308 | B-2 |
| D341 | B-25 | Q309 | F-4 |
| D501 | G-20 | Q311 | E-3 |
| D502 | G-19 | Q312 | E-25 |
| D503 | H-19 | Q313 | F-4 |
| D505 | C-6 | Q314 | B-4 |
| D506 | C-10 | Q316 | B-24 |
| D507 | B-10 | Q317 | E-3 |
| D508 | C-10 | Q318 | E-3 |
| D509 | B-9 | Q331 | E-26 |
| D510 | B-10 | Q332 | E-25 |
| D511 | D-10 | Q333 | B-25 |
| D512 | C-8 | Q334 | B-24 |
| D515 | C-7 | Q353 | B-25 |
| D516 | C-7 | Q354 | B-25 |
| D517 | C-6 | Q355 | B-25 |
| D518 | B-7 | Q356 | B-25 |
| D520 | B-19 | Q357 | E-25 |
| D1001 | G-13 | Q361 | D-25 |
| | | Q362 | D-25 |
| IC301 | G-26 | Q363 | I-3 |
| IC302 | D-27 | Q364 | H-3 |
| IC303 | G-26 | Q365 | D-2 |
| IC304 | G-24 | Q366 | E-2 |
| IC305 | B-23 | Q367 | B-5 |
| IC308 | C-26 | Q368 | E-4 |
| IC311 | B-24 | Q501 | F-20 |
| IC313 | G-4 | Q502 | F-20 |
| IC314 | C-25 | Q503 | E-7 |
| IC315 | D-25 | Q504 | C-8 |
| IC501 | F-20 | Q505 | C-7 |
| IC502 | F-7 | Q508 | H-6 |
| IC503 | G-23 | Q509 | G-6 |
| IC504 | E-8 | Q512 | B-17 |
| IC505 | D-9 | Q513 | F-15 |
| IC506 | D-22 | Q514 | D-10 |
| IC507 | C-22 | Q515 | C-18 |
| IC508 | G-20 | Q516 | C-18 |
| IC509 | D-19 | Q517 | H-23 |
| IC510 | C-8 | Q518 | H-23 |
| IC511 | D-10 | Q519 | B-8 |
| IC2001 | G-22 | Q1001 | H-11 |
| | | Q1002 | H-14 |
| PH1001 | I-12 | Q2001 | F-22 |
| PH1002 | H-13 | Q3001 | F-22 |
| Q102 | D-27 | | |

Note :

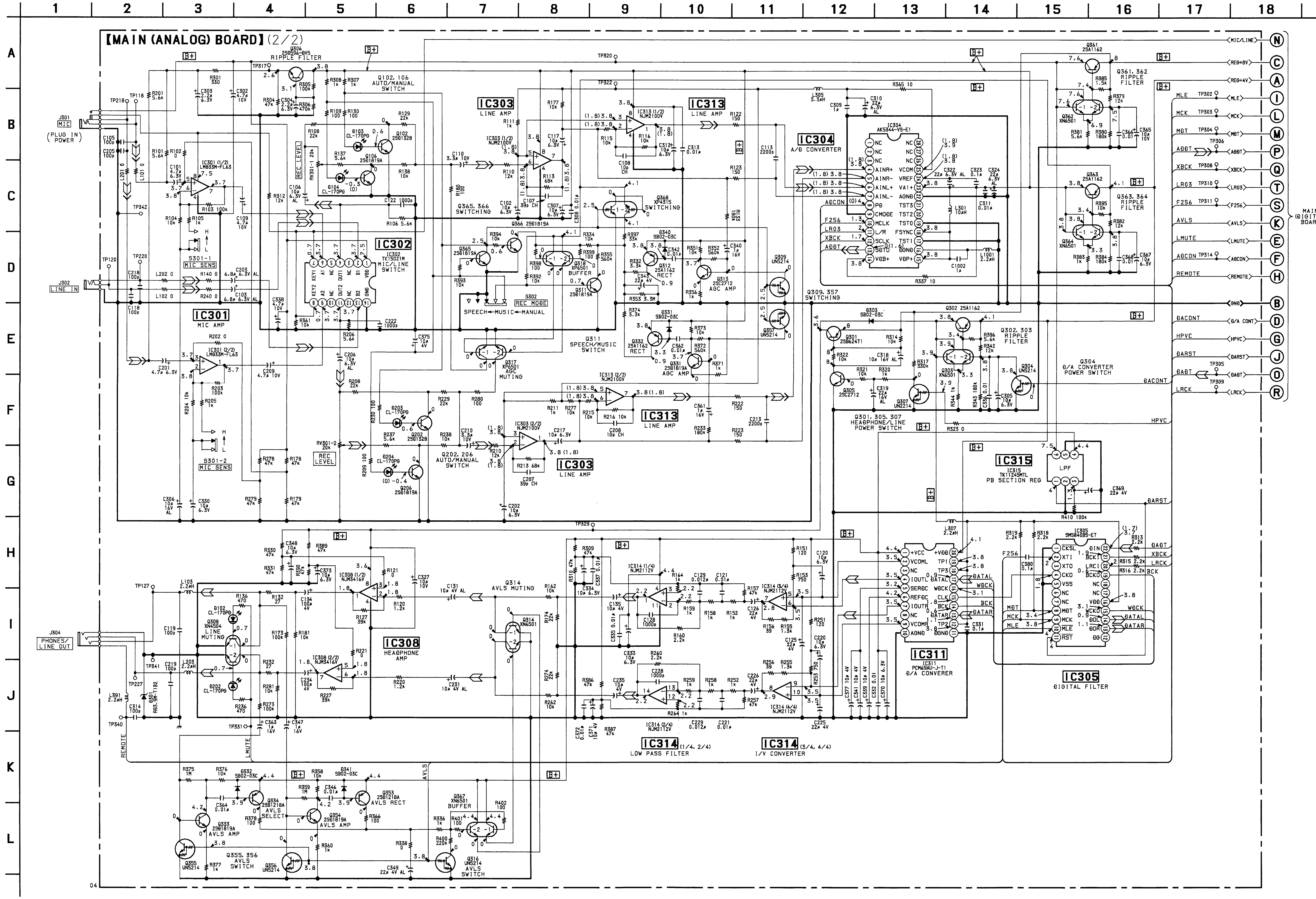
- : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- : Pattern on the side which is seen. (The other layer's patterns are not indicated.)



4-4. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 31 for Waveforms and page 46 for IC Block Diagrams.


【MAIN (DIGITAL) BOARD】(1/2)
【TRANSFORMER BOARD】
【FLEXIBLE BOARD】
SYSTEM CONTROL BOA
SWITCH UNIT
【AT-5 BOARD】
IC501
IC502
IC503
IC504
IC505
IC506
IC507
IC508
IC509
IC510
IC511
IC2001
Note :
• All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and 1/4 W or less unless otherwise specified.
• % : indicates tolerance.
• B+ : B+ Line
• : adjustment for repair.
• Power voltage is dc 6V and fed with regulated dc power supply from external power voltage jack.
• Voltage and waveforms are dc with respect to ground under no-signal conditions.
• no mark: PB
( ): REC
• Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
• Circled numbers refer to waveforms.
• Signal path.
: PB
: REC

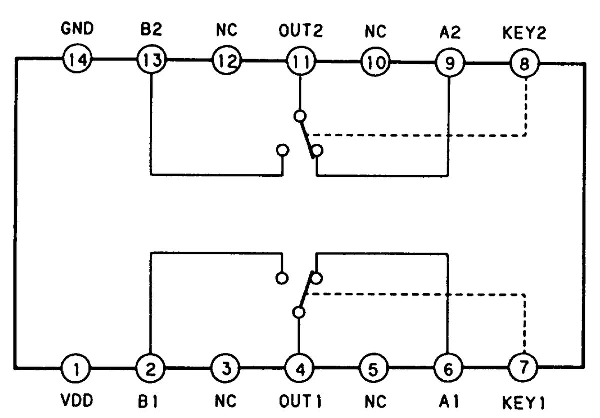
#### 4-5. SCHEMATIC DIAGRAM—ANALOG SECTION—



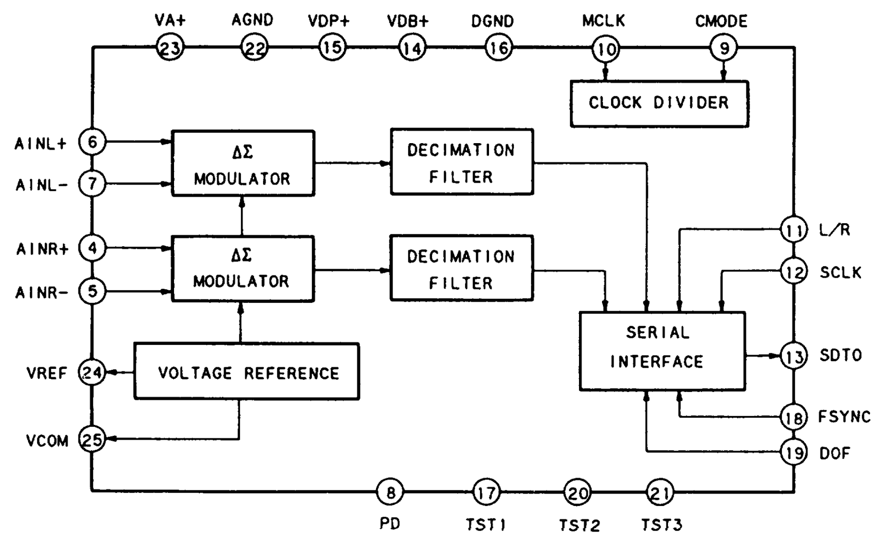
Note :
- All capacitors are in $\mu$F unless otherwise noted. pF : $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- B+ : B+ Line
- Power voltage is dc 6V and fed with regulated dc power supply from external power voltage jack.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: PB
  ( ): REC
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⊳ : PB
  ⊳⊳ : REC

• **IC Block Diagrams**

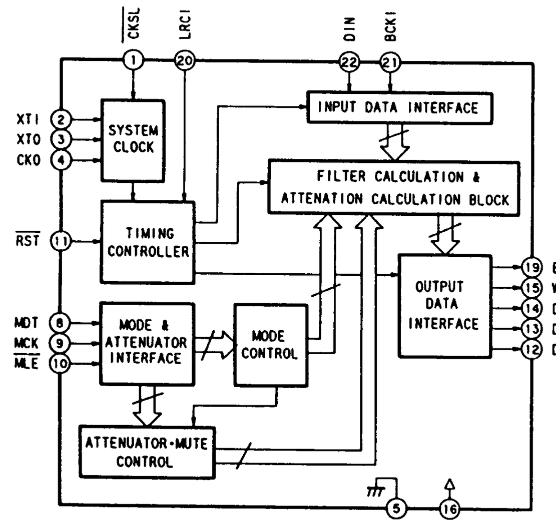
**IC302 TK15021M**



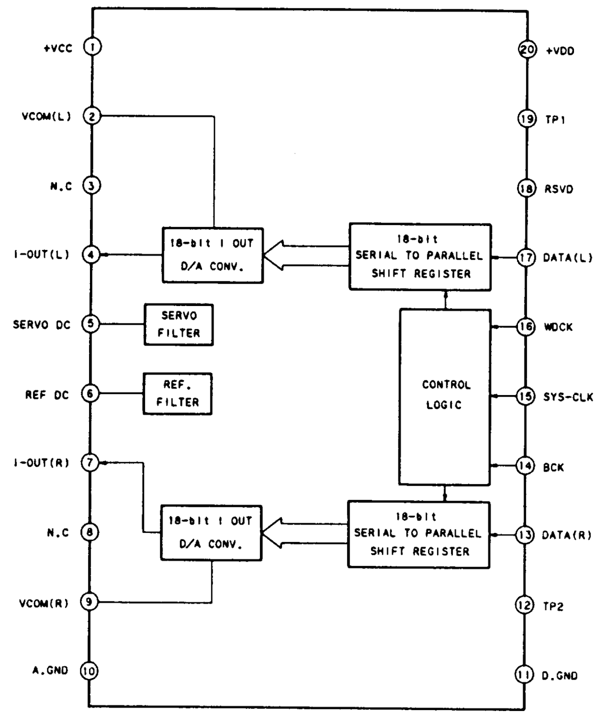
**IC304 AK5344-VS-E1**



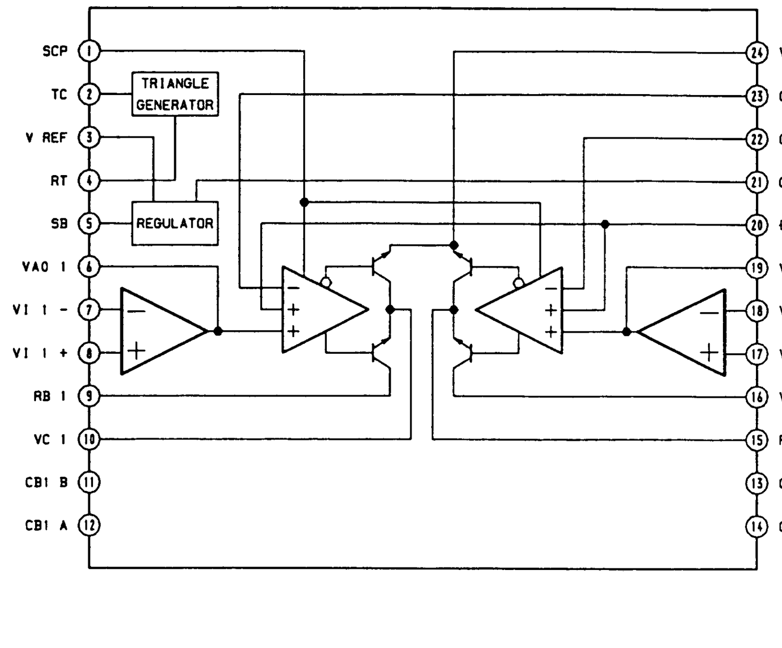
**IC305 SM5840BS-ET**



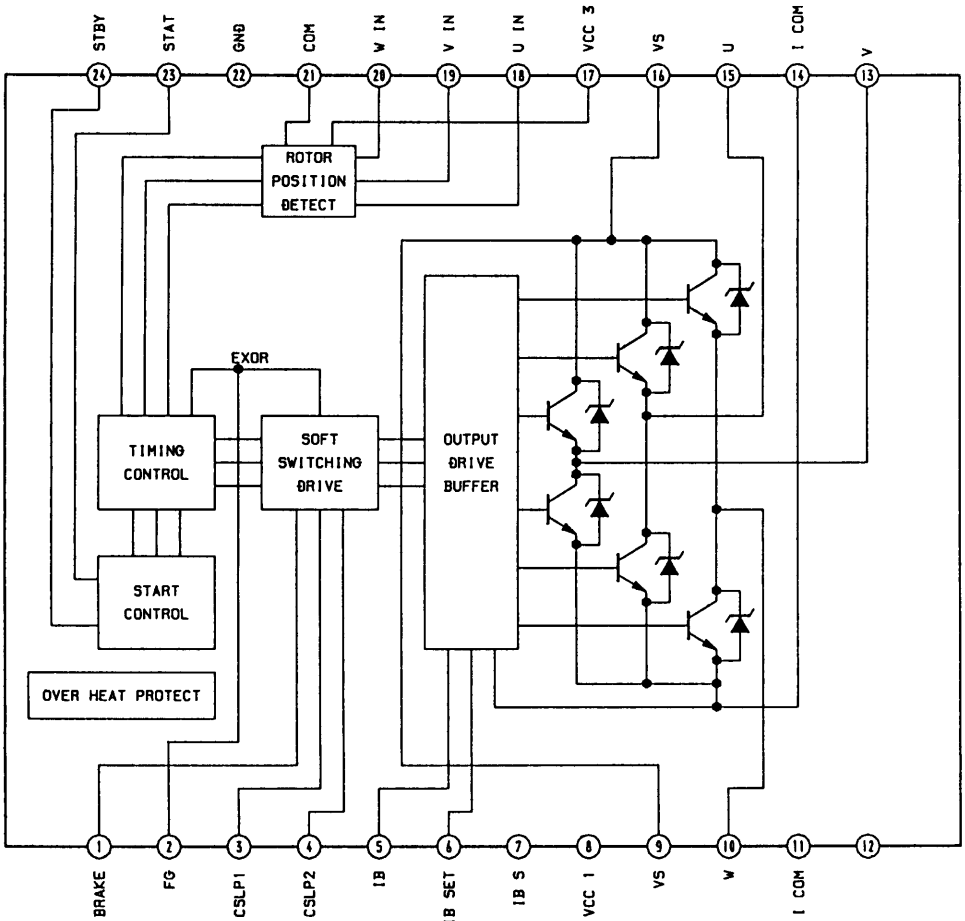
**IC311 PCM68UAU-J-T1**



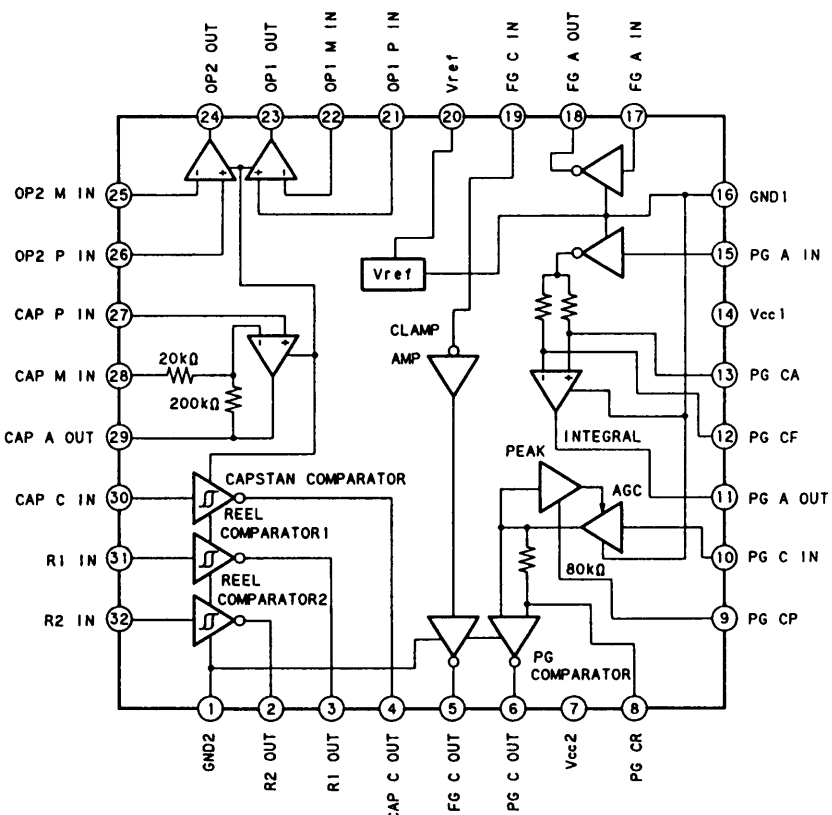
**IC501 MB3796PFV-G-BND-ER**



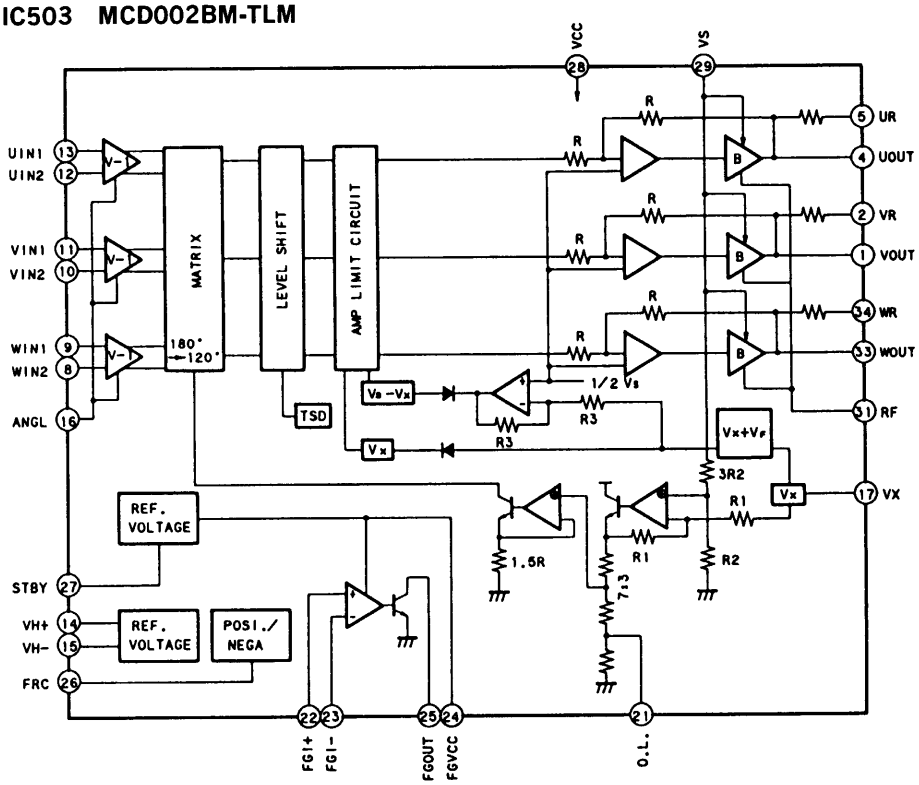
## IC502 CXA8022W-ELL2000



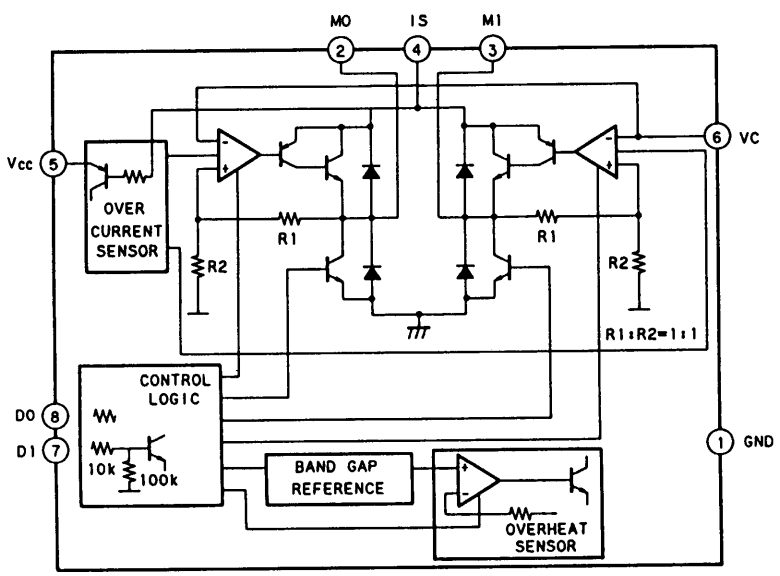

## IC504 MM1138XQ



## IC503 MCD002BM-TLM




## IC507 TK10502MTL



## 4-6. IC PIN DESCRIPTION

### • IC506 CXP80524-098R

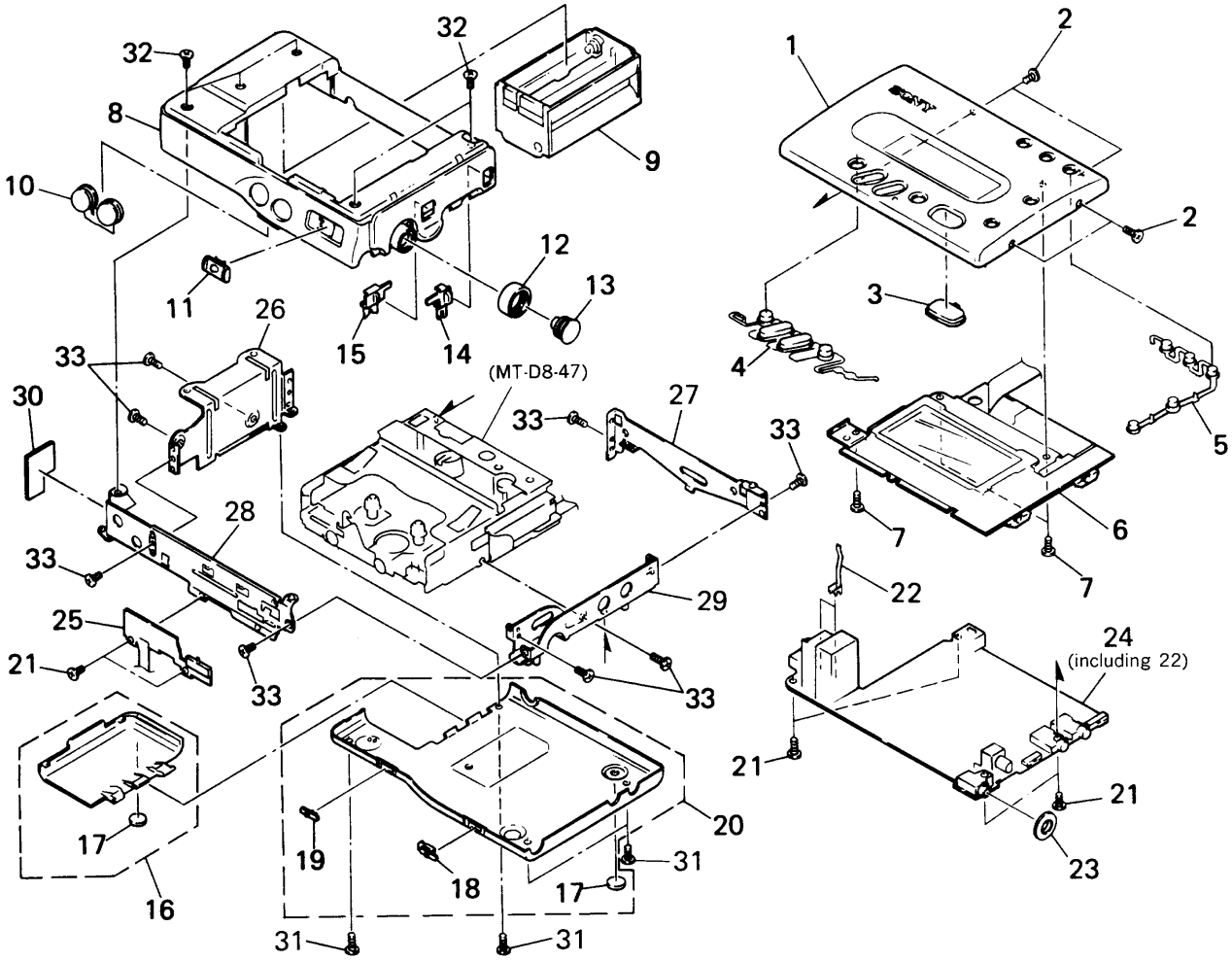
| Pin No. | Pin Name | I/O | Pin Function |
|---|---|---|---|
| 1 | DMCRQ | O | Serial communication request signal to LCD micro-computer of system control board unit. ("L" : Communication mode) |
| 2 | XSTBY | O | MB3796, CXA8022W and MCD002BM standby signal. ("L" : Standby mode) |
| 3 | DRMBR | O | Drum motor brake signal ("H" : Brake) |
| 4 | CAPDIR | O | Capstan motor rotation direction control signal ("H" : FWD) |
| 5 | DACONT | O | Power ON/OFF signal of D/A converter section. ("L" : Power ON) |
| 6 | XRSTDSP | O | CXD2605 reset signal ("L" : Reset) |
| 7 | SYSPAW | O | System power ON/OFF signal ("H" : Power ON) |
| 8 | LP/SP-OUT1 | O | LP/SP switch detect 1 |
| 9 | LP/SP-OUT2 | O | LP/SP switch detect 2 |
| 10 | | — | Not used |
| 11 | REI | I | Rotary encoder input 1 |
| 12 | REM | I | Rotary encoder input 2 |
| 13 | | — | Not used |
| 14 | REO | I | Rotary encoder input 3 |
| 15 | RELD | I | Load detection signal ("L" : Load completion) |
| 16 | REULD | I | Unload detection signal ("L" : Unload completion) |
| 17 | XRECINH | I | REC proof switch input ("L" : REC prohibition) |
| 18 | XCASLK | I | Cassette compartment lock switch input ("L" : Cassette compartment lock) |
| 19 | CASIN | I | Cassette insert detection ("H" : Cassette insert) |
| 20 | | — | Not used |
| 21 | XAVLS | I | AVLS switch input ("L" : AVLS) |
| 22 | HP/LINE | I | HEADPHONE/LINE OUT switch input ("L" : LINE OUT) |
| 23 | MIC/LINE | I | MIC/LINE IN switch input ("H" : LINE IN) |
| 24 | MUTM | I | Mute output detection of CXD2605. ("H" : Mute) |
| 25 | DIG/ANA | I | DIGITAL/ANALOG switch input ("L" : DIGITAL) |
| 26 | VOL− | I | VOLUME DOWN switch input ("L" : VOLUME DOWN) |
| 27 | VOL+ | I | VOLUME UP switch input ("L" : VOLUME UP) |
| 28 | | — | Not used |
| 29 | AC/DC | I | AC/DC power detection ("L" : AC power) |
| 30 | CTRMA | O | Control motor control signal |
| 31 | CTRMB | O | Control motor control signal |
| 32 | ENLDON | O | Tape top/end LED ON/OFF signal ("H" : LED ON) |
| 33 | | — | Not used |
| 34 | PLGON | O | Plunger ON/OFF signal ("H" : Plunger ON) |
| 35 | | — | Not used |
| 36 | MP | I | Fix to GND. |
| 37 | XRST | I | Reset input |
| 38 | | — | Not used |
| 39 | VSS | — | GND |
| 40 | XTAL | O | Crystal oscillator (9.408MHz) output |
| 41 | EXTAL | I | Crystal oscillator (9.408MHz) input |
| 42 | LP/SP-IN | I | LP/SP switch input ("L" : LP) |
| 43 | | — | Not used |
| 44 | SI | I | Serial data input from system control board unit. |
| 45 | SO | O | Serial data output to system control board unit and digital filter. |
| 46 | | — | Not used |
| 47 | XSCK | O | Serial clock output to system control board unit and digital filter. |
| 48 | SBSY | I | Communication request signal from CXD2605. (Down edge to start communication) |
| 49 | SBSI | I | Serial data input from CXD2605. |
| 50 | | — | Not used |

| Pin No. | Pin Name | I/O | Pin Function |
|---|---|---|---|
| 51 | SBSO | O | Serial data output to CXD2605. |
| 52 | EXCK | O | Serial clock output to CXD2605. |
| 53 | AVSS | — | Analog port GND |
| 54 | AVREF | — | Analog port reference GND |
| 55 | AVDD | — | +5V |
| 56 | SWPADJ | I | Switching pulse delay adjustment voltage input |
| 57 | RFENV | I | RF envelope detection input |
| 58 | REMOTE | I | Headphone remote control signal input |
| 59 | DEW | I | Dew sensor input ("L" : Dew) |
| 60 | | — | Not used |
| 61 | TEND | I | Tape top sensor input ("L" : Tape top) |
| 62 | SEND | I | Tape end sensor input ("L" : Tape end) |
| 63 | BATTERY | I | Battery voltage level detection |
| 64 | | — | Not used |
| 65 | ATFPLT | I | ATF pilot detection signal |
| 66 | TRLFG | I | Reel FG input of take up side (24 per 1 rotation) |
| 67 | | — | Not used |
| 68 | SRLFG | I | Reel FG input of supply side (24 per 1 rotation) |
| 69 | CAPFG | I | Capstan FG input (360 per 1 rotation) |
| 70 | DRMFG | I | Drum FG input (24 per 1 rotation) |
| 71 | DRMPG | I | Drum PG input |
| 72 | DREF | I | Drum reference signal (LP mode : 16.7Hz, SP mode : 33.3Hz) |
| 73 | MCLK | I | Channel clock (9.408MHz) |
| 74 | RFDT | I | RF signal input |
| 75 | AVLS | O | AVLS ON signal |
| 76 | | — | Not used |
| 77 | DRMPWM | O | Drum motor control PWM output (Carrier frequency : 36.75kHz) |
| 78 | CAPPWM | O | Capstan motor control PWM output (Carrier frequency : 36.75kHz) |
| 79 | ATFPWM | O | ATF gain control amplifier control PWM output (Carrier frequency : 36.75kHz) |
| 80 | DARST | O | Reset signal to D/A converter |
| 81 | | — | Not used |
| 82 | MLE | O | Serial data take up signal to digital filter. (Up edge to take up) |
| 83 | SYMN | I | C1 syndrome pulse input |
| 84 | STBY | I | Sleep input ("H" : Sleep) |
| 85 | | — | Not used |
| 86, 87 | VDD | — | +5V |
| 88 | | — | Not used |
| 89 | VSS | — | GND |
| 90 | | — | Not used |
| 91 | ASTY | O | ATF sync output |
| 92 | | — | Not used |
| 93 | DMUTE | O | Digital mute signal ("H" : Mute) |
| 94 | HPVC | O | Headphone amplifier voltage control signal |
| 95 | | — | Not used |
| 96 | MODE | O | Mode setting of RF amplifier ("H" : REC current ON) |
| 97 | LMUTE | O | LINE OUT mute signal ("H" : Mute) |
| 98 | ADCON | O | A/D converter ON/OFF signal |
| 99 | | — | Not used |
| 100 | SWP | O | Switching pulse output ("L" : Ach head) |

# SECTION 5
# EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.

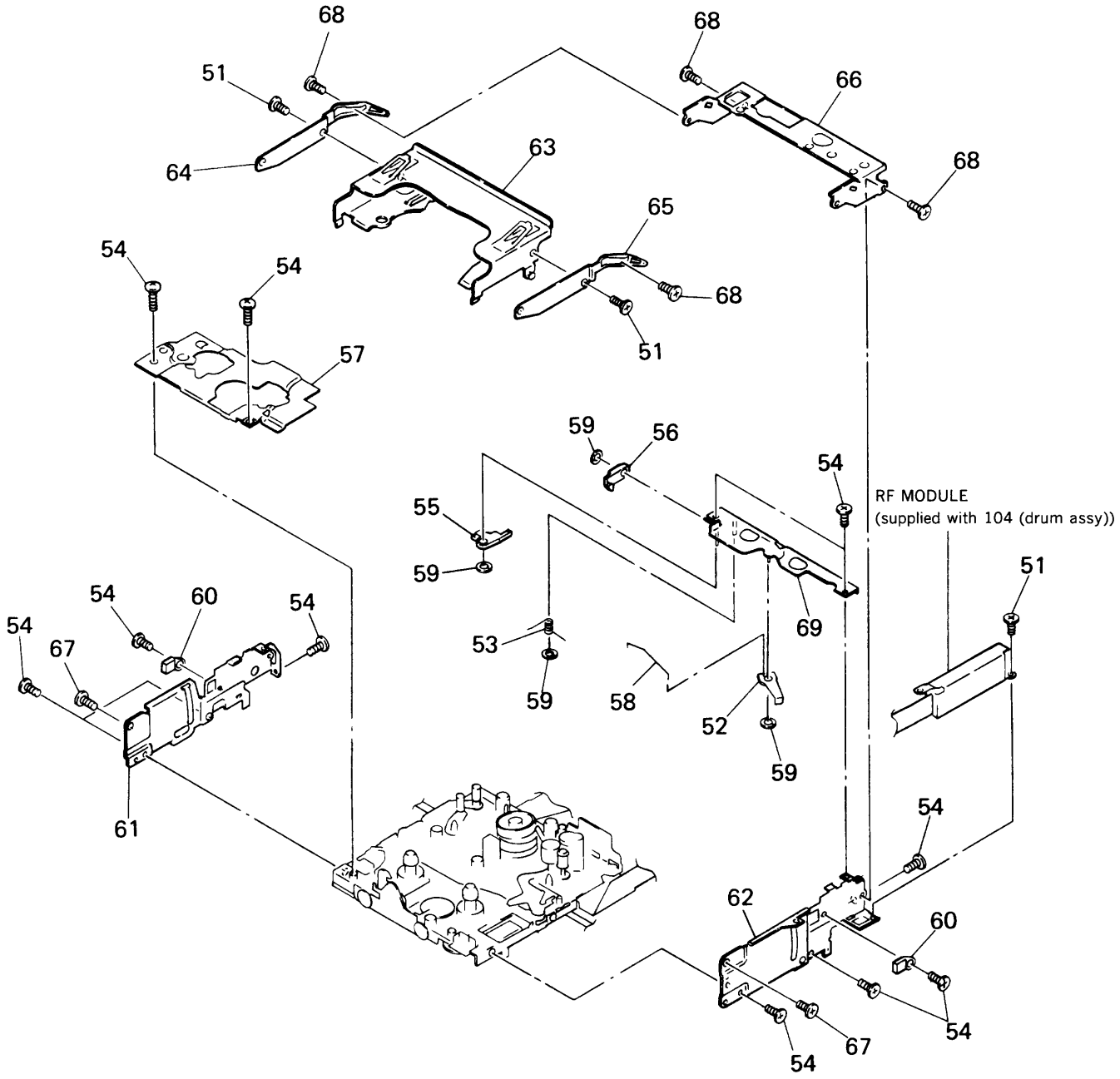
## 5-1. CABINET SECTION




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | X-4946-398-1 | LID ASSY, CASSETTE | |
| 2 | 3-704-197-13 | SCREW (M1.4X2.0), LOCKING | |
| 3 | 3-387-471-11 | BUTTON (REC/ID WRITE) | |
| 4 | 3-387-470-02 | BUTTON (⏮/◀◀, STOP, PLAY, ▶▶/⏭) | |
| 5 | X-4946-501-1 | BUTTON (CLOCK, COUNTER, RESET, LIGHT, PAUSE) | |
| 6 | 1-467-043-21 | SYSTEM CONTROL BOARD UNIT | |
| 7 | 3-318-382-61 | SCREW (1.7X2.5), TAPPING | |
| 8 | 4-976-965-01 | CABINET | |
| 9 | X-4950-538-1 | CASE ASSY, BATTERY | |
| 10 | 3-387-448-11 | BUTTON (VOLUME +/-) | |
| 11 | X-4946-397-1 | KNOB (HOLD) ASSY | |
| 12 | 3-387-453-01 | KNOB (REC.RING) | |
| 13 | 3-387-452-01 | KNOB (REC.LEVEL) | |
| 14 | 3-387-455-01 | KNOB (MIC SENS) | |
| 15 | 3-387-454-01 | KNOB (REC MODE) | |
| 16 | X-4946-399-1 | LID ASSY, BATTERY CASE | |
| 17 | 3-387-476-01 | FOOT, RUBBER | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 18 | 3-387-464-01 | KNOB (AVLS) | |
| 19 | 4-977-110-01 | KNOB (SP/LP) | |
| 20 | X-4946-401-1 | PANEL ASSY, LOWER | |
| 21 | 3-335-797-01 | SCREW (M1.4X2), TOOTHED LOCK | |
| 22 | 3-387-477-11 | TERMINAL (MAIN), BATTERY | |
| 23 | 3-387-466-01 | RING (PHONES/LINE OUT), ORNAMENTAL | |
| 24 | A-3276-893-A | MAIN BOARD, COMPLETE | |
| 25 | 1-467-044-11 | SWITCH UNIT (BLOCK TYPE) | |
| * 26 | 3-387-443-01 | BRACKET (L) | |
| * 27 | 3-387-446-01 | BRACKET (B) | |
| * 28 | X-3366-458-1 | BRACKET (F) ASSY | |
| * 29 | X-3366-457-1 | BRACKET (R) ASSY | |
| * 30 | 1-648-722-11 | AT-5 BOARD | |
| 31 | 3-704-197-23 | SCREW (M1.4X2.5), LOCKING | |
| 32 | 3-349-825-82 | SCREW, PRECISION | |
| 33 | 3-704-197-01 | SCREW (M1.4X1.6), LOCKING | |

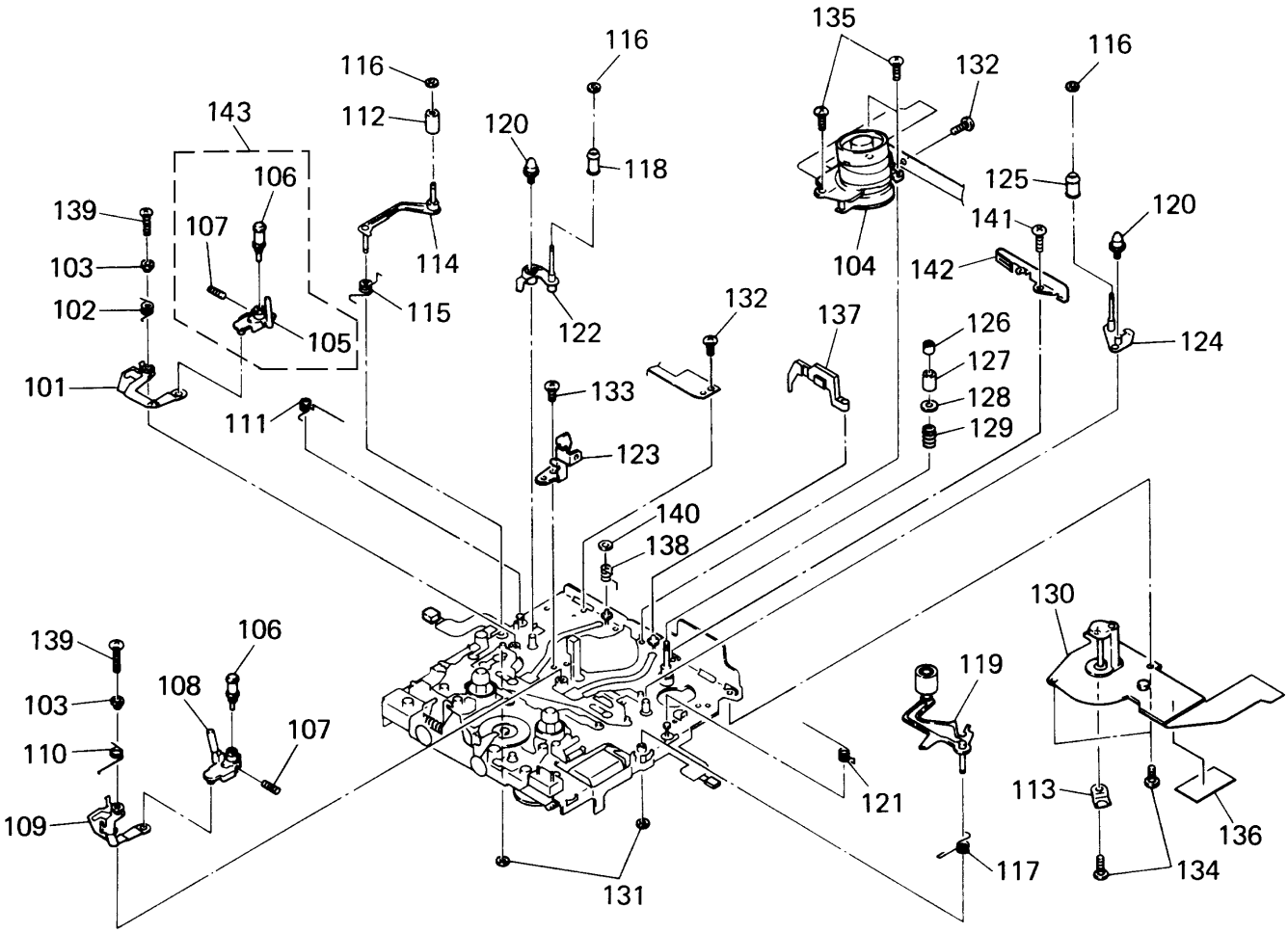
## 5-2. CASSETTE HOLDER SECTION (MT-D8-47)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | 3-349-825-01 | SCREW | |
| 52 | 3-387-569-01 | WIPER | |
| 53 | 3-363-266-01 | SPRING, TORSION | |
| 54 | 3-704-197-01 | SCREW (M1.4X1.6), LOCKING | |
| 55 | 3-363-261-01 | LEVER (B) | |
| 56 | 3-363-260-01 | LEVER (A) | |
| * 57 | 3-387-574-01 | COVER (MD) | |
| 58 | 3-363-443-01 | LINK | |
| 59 | 3-315-384-11 | WASHER, STOPPER (t=0.25) | |
| 60 | 3-387-565-01 | HOLDER (END SENSOR) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 61 | X-3366-479-2 | BRACKET (L) ASSY | |
| 62 | 3-387-573-01 | BRACKET (R) | |
| 63 | X-3366-480-1 | HOLDER (CASSETTE) ASSY | |
| 64 | 3-387-571-01 | LEVER (CASSETTE COMPARTMENT L) | |
| 65 | 3-387-570-01 | LEVER (CASSETTE COMPARTMENT R) | |
| 66 | 3-387-572-01 | HOLDER | |
| 67 | 3-387-566-01 | SCREW, STEP | |
| 68 | 3-387-567-01 | SCREW, STEP | |
| 69 | X-3366-478-1 | COVER (TAPE PASS) ASSY | |

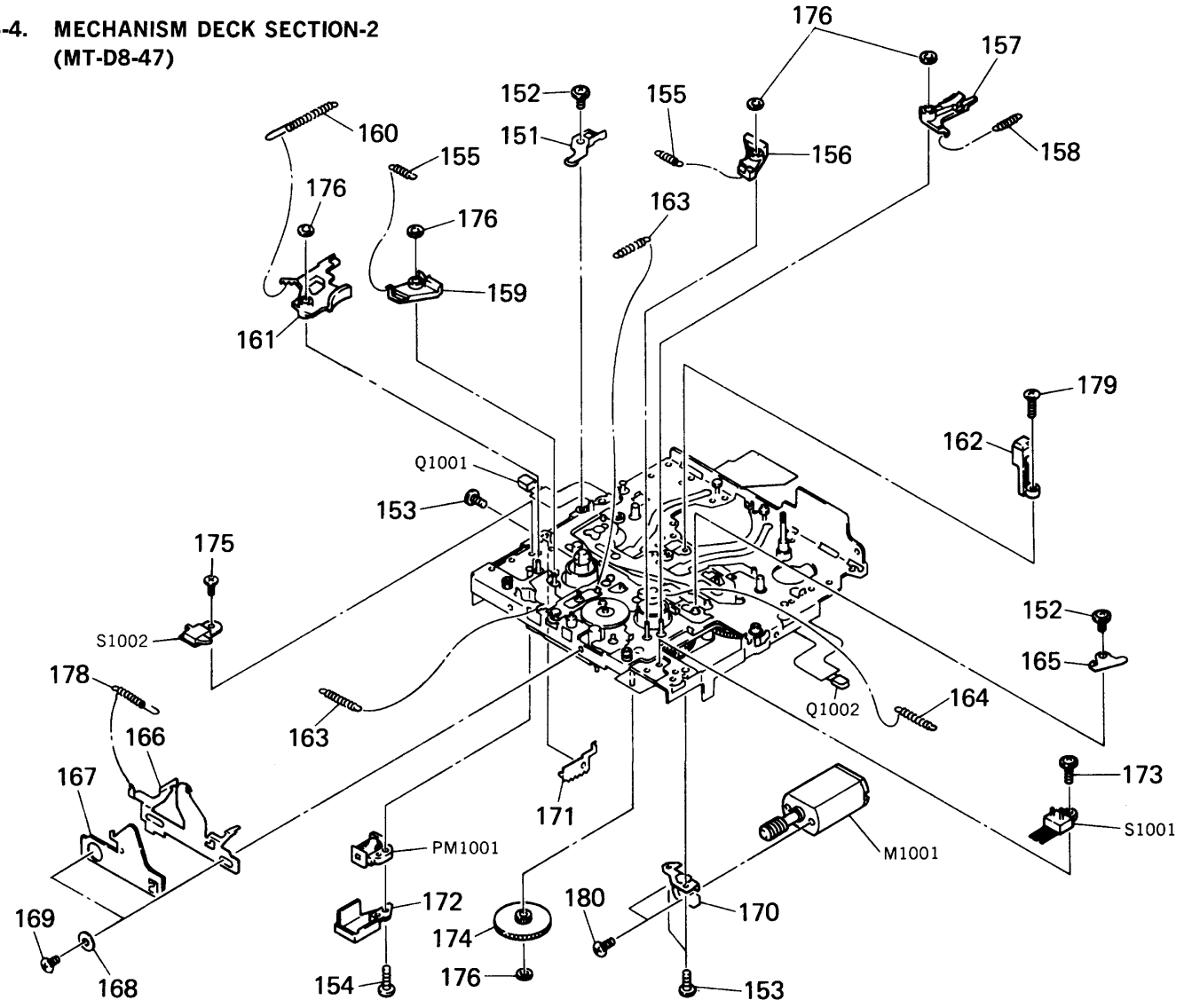
## 5-3. MECHANISM DECK SECTION-1 (MT-D8-47)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 101 | X-3344-945-1 | LEVER (LOADING. SA) ASSY | |
| 102 | 3-360-897-01 | SPRING, TORSION | |
| 103 | 3-354-247-03 | SHAFT (LOADING B) | |
| 104 | X-4943-984-1 | DRUM ASSY (INCLUDING RF MODULE) | |
| 105 | X-3344-968-1 | GUIDE BLOCK (S) ASSY, SLANT | |
| 106 | X-3344-963-1 | GUIDE (DIA. 4) ASSY, ROLLER | |
| 107 | 3-366-945-01 | SET-SCREW, SLOT M1. 2X3 | |
| 108 | X-3344-969-1 | GUIDE BLOCK (T) ASSY, SLANT | |
| 109 | X-3344-943-1 | LEVER (LOADING. TA) ASSY | |
| 110 | 3-360-895-01 | SPRING, TORSION | |
| 111 | 3-361-106-01 | SPRING, TORSION | |
| 112 | 3-360-866-01 | ROLLER (TENSION REGULATOR) | |
| 113 | 3-363-224-01 | REINFORCEMENT (CAPSTAN MOTOR) | |
| 114 | X-3366-481-1 | LEVER (TENSION REGULATOR A) ASSY | |
| 115 | 3-361-118-01 | SPRING, TORSION | |
| 116 | 3-315-414-01 | WASHER | |
| 117 | 3-361-115-01 | SPRING, TORSION | |
| 118 | 3-360-864-01 | ROLLER (B), GUIDE | |
| 119 | X-3362-201-1 | ARM ASSY, PINCH ROLLER | |
| 120 | 3-360-817-01 | SHAFT (CASSETTE) | |
| 121 | 3-361-105-01 | SPRING, TORSION | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 122 | X-3366-482-1 | LEVER (SF) ASSY | |
| * 123 | 3-388-542-02 | REINFORCEMENT (LED) | |
| 124 | X-3366-483-1 | LEVER (TF) ASSY | |
| 125 | 3-360-863-01 | ROLLER (A), GUIDE | |
| 126 | 3-337-605-01 | NUT, ADJUSTMENT | |
| 127 | 3-366-697-21 | GUIDE (GA), FIXED | |
| 128 | 3-337-677-01 | FLANGE | |
| 129 | 3-573-470-00 | SPRING, COMPRESSION | |
| 130 | 8-835-495-01 | MOTOR, DC SCR-0201A | |
| 131 | 3-315-384-11 | WASHER, STOPPER (t=0. 25) | |
| 132 | 3-349-825-11 | SCREW | |
| 133 | 3-365-611-11 | SCREW (M1. 4) | |
| 134 | 3-704-197-01 | SCREW (M1. 4X1. 6), LOCKING | |
| 135 | 3-704-197-21 | SCREW (M1. 4X2. 5), LOCKING | |
| 136 | 4-017-441-01 | CUSHION (B) | |
| 137 | X-4946-420-1 | LEVER (HEAD CLEANER) ASSY | |
| 138 | 4-979-601-01 | SPRING, TORSION | |
| 139 | 7-627-451-57 | SCREW, PRECISION +K 1. 4X4 | |
| 140 | 3-366-249-01 | WASHER | |
| 141 | 3-349-825-01 | SCREW | |
| * 142 | 4-977-327-01 | PLATE, GROUND | |
| 143 | X-3362-278-9 | GUIDE BLOCK (S) BLOCK ASSY, SLANT | |

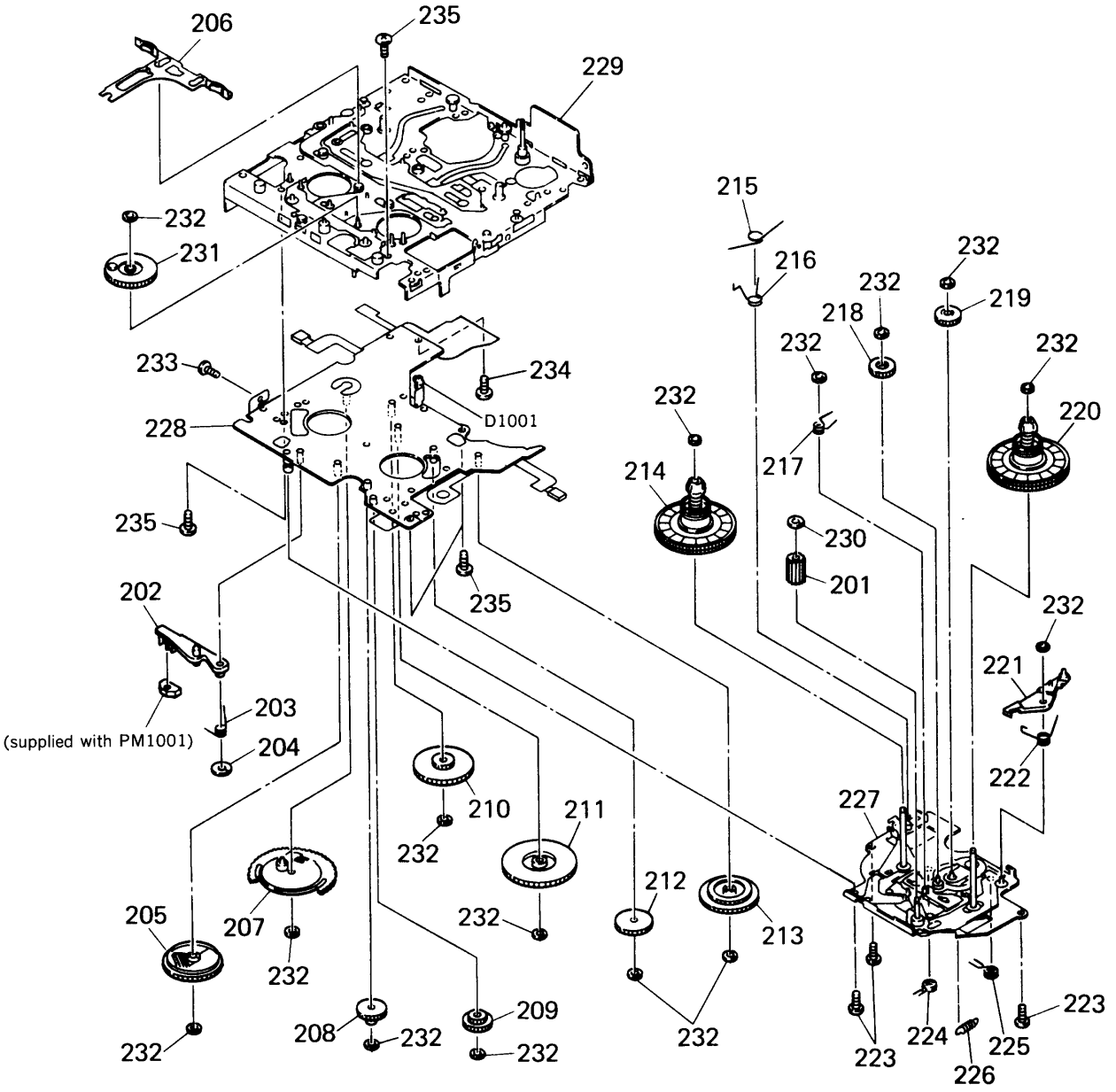
## 5-4. MECHANISM DECK SECTION-2 (MT-D8-47)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 151 | X-3344-940-1 | LEVER (TENSION REGULATOR B1) ASSY | |
| 151 | X-3362-179-1 | LEVER (TENSION REGULATOR B2) ASSY | |
| * 151 | X-3362-180-1 | LEVER (TENSION REGULATOR B3) ASSY | |
| * 151 | X-3362-181-1 | LEVER (TENSION REGULATOR B4) ASSY | |
| 152 | 3-703-502-91 | SCREW | |
| 153 | 3-365-611-11 | SCREW (M1.4) | |
| 154 | 3-703-502-31 | SCREW | |
| 155 | 3-361-113-01 | SPRING, TENSION | |
| 156 | X-3344-947-1 | LEVER (BRAKE T) ASSY | |
| 157 | X-3344-946-1 | LEVER (BRAKE RBT) ASSY | |
| 158 | 3-361-111-01 | SPRING, TENSION (40g/cm) | |
| 158 | 3-367-610-01 | SPRING, TENSION (35g/cm) | |
| 158 | 3-367-611-01 | SPRING, TENSION (30g/cm) | |
| 158 | 3-369-815-01 | SPRING, TENSION (45g/cm) | |
| 158 | 3-369-816-01 | SPRING, TENSION (49g/cm) | |
| 158 | 3-369-817-01 | SPRING, TENSION (55g/cm) | |
| 159 | X-3344-948-1 | LEVER (BRAKE S) ASSY | |
| 160 | 3-361-112-01 | SPRING, TENSION | |
| 161 | X-3344-949-1 | LEVER (TENSION REGULATOR) ASSY | |
| 162 | 3-360-872-01 | BRACKET (LED) | |
| 163 | 3-361-107-01 | SPRING, TENSION | |
| 164 | 3-361-110-11 | SPRING, TENSION | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 165 | X-3344-951-1 | LEVER (R.BT RETURN A) ASSY | |
| * 165 | X-3362-182-1 | LEVER (R.BT RETERN B) ASSY | |
| 165 | X-4941-476-1 | LEVER (R.BT RETURN C) ASSY | |
| 166 | 3-387-575-03 | LEVER (CASSETTE COMPARTMENT LOCK) | |
| 167 | 3-387-577-01 | LEVER (CASSETTE COMPARTMENT TRIGGER) | |
| 168 | 3-387-568-01 | SHAFT (LEVER, CASSETTE COMPARTMENT LOCK) | |
| 169 | 3-704-246-01 | SCREW (P1.4X1.6) | |
| 170 | 3-387-562-01 | BRACKET (MODE.MOTOR) | |
| 171 | 3-360-869-01 | BRACKET (BT, SPRING) | |
| 172 | 3-360-882-01 | COVER (SOLENOID) | |
| 173 | 3-703-502-21 | SCREW | |
| 174 | 3-360-829-01 | GEAR (MODE B) | |
| 176 | 3-315-384-11 | WASHER, STOPPER (t=0.25) | |
| 178 | 4-959-408-01 | SPRING (POWER TENSION), TENSION | |
| 179 | 3-704-197-21 | SCREW (M1.4X2.5), LOCKING | |
| 180 | 7-627-551-47 | SCREW, PRECISION +P 1.4X1.4 | |
| M1001 | 1-698-104-11 | MOTOR (WITH GEAR) | |
| PM1001 | 1-454-602-11 | SOLENOID, PLUNGER | |
| Q1001 | 8-729-925-30 | PHOTO TRANSISTOR PT4810FJ | |
| Q1002 | 8-729-925-30 | PHOTO TRANSISTOR PT4810FJ | |
| S1001 | 1-571-878-11 | SWITCH, PUSH (2 KEY) (CASSETTE DET/REC PROOF) | |
| S1002 | 1-572-288-11 | SWITCH, PUSH (AC POWER) (1 KEY) (CASSETTE COMPARTMENT LOCK) | |

## 5-5. MECHANISM DECK SECTION-3
## (MT-D8-47)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 201 | 3-360-831-02 | GEAR (MODE E) | |
| 202 | X-3344-956-3 | LEVER (SOLENOID) ASSY | |
| 203 | 3-361-117-01 | SPRING, TORSION | |
| 204 | 3-311-815-11 | WASHER, POLYETHYLENE | |
| 205 | X-3344-966-3 | GEAR (A) ASSY, CAM | |
| 206 | X-3344-959-1 | LEVER (SOFT BRAKE) ASSY | |
| 207 | X-4946-589-1 | GEAR (LOADING) ASSY | |
| 208 | 3-360-832-02 | GEAR (MODE D) | |
| 209 | 3-360-830-02 | GEAR (MODE C) | |
| 210 | 3-360-828-01 | GEAR (E) | |
| 211 | 3-360-883-02 | GEAR (D) | |
| 212 | 3-360-827-01 | GEAR (C) | |
| 213 | 3-360-824-01 | GEAR (B) | |
| 214 | X-3344-960-4 | TABLE (S) ASSY, REEL | |
| 215 | 3-361-104-01 | SPRING, TORSION | |
| 216 | 3-361-116-03 | SPRING, TORSION | |
| 217 | 3-361-103-11 | SPRING, TORSION | |
| 218 | 3-360-826-02 | GEAR (FF/REW) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 219 | 3-360-825-01 | GEAR (FR) | |
| 220 | X-3344-961-4 | TABLE (T) ASSY, REEL | |
| 221 | 3-360-849-02 | LEVER (T LOCK) | |
| 222 | 3-361-114-01 | SPRING, TORSION | |
| 223 | 3-703-502-01 | SCREW | |
| 224 | 3-361-102-01 | SPRING, TORSION | |
| 225 | 3-360-896-03 | SPRING, TORSION | |
| 226 | 3-370-921-02 | SPRING, TENSION | |
| 227 | X-3366-477-1 | CHASSIS (REEL) ASSY | |
| 228 | X-4944-047-1 | CHASSIS (SUB) ASSY | |
| 229 | X-4946-432-1 | CHASSIS (MAIN) ASSY | |
| 230 | 3-321-813-01 | WASHER, COTTER POLYETHYLENE | |
| 231 | 3-360-886-03 | GEAR (B), CAM | |
| 232 | 3-315-384-11 | WASHER, STOPPER (t=0.25) | |
| 233 | 3-349-825-01 | SCREW | |
| 234 | 3-349-825-11 | SCREW | |
| 235 | 3-365-611-11 | SCREW (M1.4) | |
| D1001 | 8-719-988-42 | LED GL453S | |

**AT-5** **MAIN**

# SECTION 6
# ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  JE : Tourist model
  G : German model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:$\mu$, for example:
  uA..: $\mu$A.. uPA..: $\mu$PA..
  uPB..: $\mu$PB.. uPC..: $\mu$PC.. uPD..: $\mu$PD..
- CAPACITORS
  uF: $\mu$F
- COILS
  uH: $\mu$H

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | 1-648-722-11 | AT-5 BOARD | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C700 | 1-104-964-11 | ELECT | 470uF | 20% | 10V |
| ********** | | | | | |
| | A-3276-893-A | MAIN BOARD, COMPLETE (INCLUDING TRANSFORMER BOARD) | | | |
| | | ********** | | | |
| | 3-387-477-11 | TERMINAL (MAIN), BATTERY | | | |
| | 3-708-377-01 | SLIDER, SURF LOCK (16P) | | | |
| | | < CAPACITOR > | | | |
| C001 | 1-164-222-11 | CERAMIC CHIP | 0.22uF | | 25V |
| C002 | 1-164-222-11 | CERAMIC CHIP | 0.22uF | | 25V |
| C101 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V |
| C102 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C103 | 1-110-477-11 | SOLID CHIP | 6.8uF | 20% | 6.3V |
| C105 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C106 | 1-110-410-11 | SOLID CHIP | 10uF | 20% | 6.3V |
| C107 | 1-162-922-11 | CERAMIC CHIP | 39PF | 5% | 50V |
| C108 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C109 | 1-135-210-11 | TANTALUM CHIP | 4.7uF | 20% | 10V |
| C110 | 1-135-180-21 | TANTALUM CHIP | 3.3uF | 20% | 6.3V |
| C113 | 1-164-161-11 | CERAMIC CHIP | 0.0022uF | 10% | 100V |
| C117 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C118 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C119 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C120 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6.3V |
| C121 | 1-164-480-11 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C122 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C125 | 1-135-202-21 | TANTAL. CHIP | 22uF | 20% | 4V |
| C126 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C128 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C129 | 1-163-022-00 | CERAMIC CHIP | 0.012uF | 10% | 50V |
| C131 | 1-128-014-11 | SOLID CHIP | 10uF | 20% | 4V |
| C134 | 1-104-848-11 | TANTAL. CHIP | 100uF | 20% | 4V |
| C135 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C201 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V |
| C202 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C203 | 1-135-211-11 | TANTAL. CHIP | 6.8uF | 20% | 6.3V |
| C205 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C206 | 1-110-410-11 | SOLID CHIP | 10uF | 20% | 6.3V |
| C207 | 1-162-922-11 | CERAMIC CHIP | 39PF | 5% | 50V |
| C208 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C209 | 1-135-210-11 | TANTALUM CHIP | 4.7uF | 20% | 10V |
| C210 | 1-135-180-21 | TANTALUM CHIP | 3.3uF | 20% | 6.3V |
| C213 | 1-164-161-11 | CERAMIC CHIP | 0.0022uF | 10% | 100V |
| C217 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C218 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C219 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C220 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6.3V |
| C221 | 1-164-480-11 | CERAMIC CHIP | 0.01uF | 10% | 50V |
| C222 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C225 | 1-135-202-21 | TANTAL. CHIP | 22uF | 20% | 4V |
| C226 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C228 | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C229 | 1-163-022-00 | CERAMIC CHIP | 0.012uF | 10% | 50V |
| C231 | 1-128-014-11 | SOLID CHIP | 10uF | 20% | 4V |
| C234 | 1-104-848-11 | TANTAL. CHIP | 100uF | 20% | 4V |
| C235 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C302 | 1-135-210-11 | TANTALUM CHIP | 4.7uF | 20% | 10V |
| C303 | 1-135-149-21 | TANTALUM CHIP | 2.2uF | 20% | 10V |
| C304 | 1-135-149-21 | TANTALUM CHIP | 2.2uF | 20% | 10V |
| C305 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C306 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C307 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C308 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C309 | 1-162-638-11 | CERAMIC CHIP | 1uF | | 16V |
| C310 | 1-124-778-00 | ELECT CHIP | 22uF | 20% | 6.3V |
| C311 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C312 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C313 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C314 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C318 | 1-124-779-00 | ELECT CHIP | 10uF | 20% | 16V |
| C319 | 1-126-395-11 | ELECT | 22uF | 20% | 16V |
| C322 | 1-124-778-00 | ELECT CHIP | 22uF | 20% | 6.3V |
| C323 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C324 | 1-124-778-00 | ELECT CHIP | 22uF | 20% | 6. 3V |
| C327 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C330 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6. 3V |
| C331 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C332 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C333 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C334 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C335-337 | | | | | |
| | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C338 | 1-135-210-11 | TANTALUM CHIP | 4. 7uF | 20% | 10V |
| C339 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C340 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C341 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C342 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C343 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C346 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C347 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C348 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C349 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C361 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C362 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C363 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C364 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C365 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C366 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C367 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C368 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C369 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C370 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6. 3V |
| C371 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C372 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C373 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C375 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6. 3V |
| C377 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C380 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C501 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C502 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C503 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C504 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C505 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C506 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C507 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C508 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C509 | 1-162-962-11 | CERAMIC CHIP | 470PF | 10% | 50V |
| C510 | 1-164-004-11 | CERAMIC CHIP | 0. 1uF | 10% | 25V |
| C511 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C513 | 1-164-004-11 | CERAMIC CHIP | 0. 1uF | 10% | 25V |
| C514 | 1-162-967-11 | CERAMIC CHIP | 0. 0033uF | 10% | 50V |
| C517 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C518 | 1-162-964-11 | CERAMIC CHIP | 0. 001uF | 10% | 50V |
| C519 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C521-523 | | | | | |
| | 1-162-964-11 | CERAMIC CHIP | 0. 001uF | 10% | 50V |
| C524 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C525 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6. 3V |
| C526 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C528 | 1-162-960-11 | CERAMIC CHIP | 220PF | 10% | 50V |
| C529 | 1-162-960-11 | CERAMIC CHIP | 220PF | 10% | 50V |
| C530 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C532 | 1-162-966-11 | CERAMIC CHIP | 0. 0022uF | 10% | 50V |
| C533 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C534 | 1-162-964-11 | CERAMIC CHIP | 0. 001uF | 10% | 50V |
| C535 | 1-162-964-11 | CERAMIC CHIP | 0. 001uF | 10% | 50V |
| C536 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C537 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C538 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C539 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C540 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 10V |
| C541 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C542 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C543 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C544 | 1-135-091-00 | TANTAL. CHIP | 1uF | 20% | 16V |
| C545 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C546 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C547 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C549-552 | | | | | |
| | 1-127-558-11 | ELECT(SOLID) | 10uF | 20% | 10V |
| C553 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 10V |
| C554 | 1-127-558-11 | ELECT(SOLID) | 10uF | 20% | 10V |
| C557-559 | | | | | |
| | 1-164-227-11 | CERAMIC CHIP | 0. 022uF | 10% | 25V |
| C560 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C561 | 1-162-970-11 | CERAMIC CHIP | 0. 01uF | 10% | 25V |
| C562 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C563 | 1-162-964-11 | CERAMIC CHIP | 0. 001uF | 10% | 50V |
| C564 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C565 | 1-107-685-11 | TANTAL. CHIP | 15uF | 20% | 6. 3V |
| C566 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C567 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C568 | 1-164-227-11 | CERAMIC CHIP | 0. 022uF | 10% | 25V |
| C569-571 | | | | | |
| | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C572 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6. 3V |
| C573 | 1-164-156-11 | CERAMIC CHIP | 0. 1uF | | 25V |
| C574 | 1-162-917-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C575 | 1-162-917-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C576 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 10V |
| C577 | 1-135-148-21 | TANTAL. CHIP | 1. 5uF | 20% | 10V |

# MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C578 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C579 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C580 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C581 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C582 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C583 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C584 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C586 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C587 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C588 | 1-104-755-11 | ELECT | 68uF | 20% | 6.3V |
| C591 | 1-162-917-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C592 | 1-162-910-11 | CERAMIC CHIP | 5PF | 0.25PF | 50V |
| C593 | 1-162-910-11 | CERAMIC CHIP | 5PF | 0.25PF | 50V |
| C594 | 1-162-917-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C595 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C596 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C597 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C598 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C599 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C600 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C601 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C602 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C605 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C606 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C608 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C609 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C610 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C611 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C613 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C614 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C615 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C616 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C617 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C618 | 1-162-923-11 | CERAMIC CHIP | 47PF | 5% | 50V |
| C620 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C621 | 1-162-979-11 | CERAMIC CHIP | 0.0027uF | 10% | 50V |
| C622 | 1-162-953-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C624 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C627 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C1000 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1002 | 1-162-638-11 | CERAMIC CHIP | 1uF | | 16V |
| C2001 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C2002 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C2004 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C2005 | 1-135-179-21 | TANTAL. CHIP | 2.2uF | 20% | 16V |
| C2008 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C2009 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C3001 | 1-135-148-21 | TANTAL. CHIP | 1.5uF | 20% | 10V |
| C3002 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < CONNECTOR > | |
| * CN501 | 1-750-374-11 | CONNECTOR, FPC 14P | |
| * CN502 | 1-691-419-11 | HOUSING, CONNECTOR 8P | |
| CN504 | 1-569-530-11 | HOUSING, CONNECTOR 16P | |
| * CN505 | 1-691-798-11 | HOUSING, CONNECTOR 22P | |
| * CN507 | 1-750-375-11 | CONNECTOR, FPC 22P | |
| CN508 | 1-750-377-11 | SOCKET, CONNECTOR 7P (REMOTE DIGITAL I/O) | |
| * CN509 | 1-750-373-11 | CONNECTOR, FPC 8P | |
| | | < DC-DC CONVERTER > | |
| CP501 | 1-467-045-11 | CONVERTER UNIT, DC-DC | |
| | | < DIODE > | |
| D102 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D103 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D104 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D202 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D203 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D204 | 8-719-033-14 | LED CL-170PG-CD-T | |
| D301 | 8-719-105-58 | DIODE RD3.9M-B2 | |
| D303 | 8-719-975-43 | DIODE RB420D | |
| D331 | 8-719-975-43 | DIODE RB420D | |
| D332 | 8-719-975-43 | DIODE RB420D | |
| D340 | 8-719-975-43 | DIODE RB420D | |
| D341 | 8-719-975-43 | DIODE RB420D | |
| D501 | 8-719-980-38 | DIODE SB07-03C | |
| D502 | 8-719-980-38 | DIODE SB07-03C | |
| D503 | 8-719-980-38 | DIODE SB07-03C | |
| D505 | 8-719-404-16 | DIODE MA713 | |
| D506 | 8-719-800-76 | DIODE 1SS226 | |
| D507 | 8-719-800-76 | DIODE 1SS226 | |
| D508 | 8-719-800-76 | DIODE 1SS226 | |
| D509 | 8-719-800-76 | DIODE 1SS226 | |
| D510 | 8-719-026-26 | DIODE MA786WK | |
| D511 | 8-719-105-91 | DIODE RD5.6M-B2 | |
| D512 | 8-719-404-35 | DIODE MA141WK | |
| D515 | 8-719-820-05 | DIODE 1SS181 | |
| D516 | 8-719-820-05 | DIODE 1SS181 | |
| D517 | 8-719-989-73 | DIODE SB007T03C | |
| D518 | 8-719-404-35 | DIODE MA141WK | |
| D520 | 8-719-404-16 | DIODE MA713 | |
| | | < IC > | |
| IC301 | 8-759-970-66 | IC LM833M-FL63 | |
| IC302 | 8-759-161-76 | IC TK15021MTL | |
| IC303 | 8-759-097-92 | IC NJM2100V | |
| IC304 | 8-759-161-74 | IC AK5344-VS-E1 | |
| IC305 | 8-759-501-41 | IC SM5840BS | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| IC308 | 8-759-058-41 | IC NJM3416V | |
| IC311 | 8-759-178-39 | IC PCM69AU-J-T1 | |
| IC313 | 8-759-097-92 | IC NJM2100V | |
| IC314 | 8-759-161-75 | IC NJM2112V(TE2) | |
| IC315 | 8-759-168-90 | IC TK11245TL | |
| IC501 | 8-759-094-01 | IC MB3796PF-EF | |
| IC502 | 8-759-094-02 | IC CXA8022N | |
| IC503 | 8-759-164-58 | IC MCD002BM-TLM | |
| IC504 | 8-759-159-76 | IC MM1138XQ | |
| IC505 | 8-759-168-66 | IC RH5RE404AA-T1 | |
| IC506 | 8-752-845-67 | IC CXP80524-098R | |
| IC507 | 8-759-159-77 | IC TK10502MT1 | |
| IC508 | 8-752-352-24 | IC CXD2605R | |
| IC509 | 8-759-031-58 | IC SC7SU04F | |
| IC510 | 8-752-343-47 | IC CXK58257ATM-12LB | |
| IC511 | 8-759-031-58 | IC SC7SU04F | |
| IC2001 | 8-759-178-44 | IC RN5VL33AA-TL | |
| | | < JACK > | |
| J301 | 1-750-369-21 | JACK (MIC) | |
| J302 | 1-750-370-21 | JACK (LINE IN) | |
| J304 | 1-750-372-21 | JACK (PHONES/LINE OUT) | |
| J501 | 1-750-368-11 | JACK, DC (POLARITY UNIFIED TYPE) | (DC IN 6V) |
| | | < COIL > | |
| L101 | 1-216-295-11 | CONDUCTOR, CHIP | (2012) |
| L102 | 1-216-295-11 | CONDUCTOR, CHIP | (2012) |
| L103 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L201 | 1-216-295-11 | CONDUCTOR, CHIP | (2012) |
| L202 | 1-216-295-11 | CONDUCTOR, CHIP | (2012) |
| L203 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L301 | 1-412-006-31 | INDUCTOR CHIP 10uH | |
| L305 | 1-410-999-11 | INDUCTOR CHIP 3.3uH | |
| L307 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L391 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L501 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L502 | 1-412-002-31 | INDUCTOR CHIP 4.7uH | |
| L503 | 1-412-002-31 | INDUCTOR CHIP 4.7uH | |
| L504 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L505 | 1-424-213-11 | INDUCTOR 100uH | |
| L506 | 1-414-214-11 | INDUCTOR 200uH | |
| L507 | 1-412-006-31 | INDUCTOR CHIP 10uH | |
| L508 | 1-412-006-31 | INDUCTOR CHIP 10uH | |
| L509 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L510 | 1-410-196-11 | INDUCTOR CHIP 2.2uH | |
| L511 | 1-216-295-11 | CONDUCTOR, CHIP | (2012) |
| L512 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |
| L1001 | 1-410-997-31 | INDUCTOR CHIP 2.2uH | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < TRANSISTOR > | |
| Q102 | 8-729-400-55 | TRANSISTOR 2SD1328-S | |
| Q106 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q202 | 8-729-400-55 | TRANSISTOR 2SD1328-S | |
| Q206 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q301 | 8-729-141-48 | TRANSISTOR 2SB624-BV345 | |
| Q302 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q303 | 8-729-402-19 | TRANSISTOR XN6501 | |
| Q304 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q305 | 8-729-230-49 | TRANSISTOR 2SC2712-YG | |
| Q306 | 8-729-159-65 | TRANSISTOR 2SD596-DV5 | |
| Q307 | 8-729-900-52 | TRANSISTOR DTC114YK | |
| Q308 | 8-729-425-18 | TRANSISTOR XN4504 | |
| Q309 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q311 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q312 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q313 | 8-729-230-49 | TRANSISTOR 2SC2712-YG | |
| Q314 | 8-729-402-19 | TRANSISTOR XN6501 | |
| Q316 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q317 | 8-729-427-83 | TRANSISTOR XP6501 | |
| Q318 | 8-729-427-83 | TRANSISTOR XP6501 | |
| Q331 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q332 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q333 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q334 | 8-729-402-55 | TRANSISTOR 2SB1218A-R-TX | |
| Q353 | 8-729-402-55 | TRANSISTOR 2SB1218A-R-TX | |
| Q354 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q355 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q356 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q357 | 8-729-402-93 | TRANSISTOR UN5214-TX | |
| Q361 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q362 | 8-729-402-19 | TRANSISTOR XN6501 | |
| Q363 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q364 | 8-729-402-19 | TRANSISTOR XN6501 | |
| Q365 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q366 | 8-729-402-32 | TRANSISTOR 2SD1819A-R | |
| Q367 | 8-729-427-83 | TRANSISTOR XP6501 | |
| Q368 | 8-729-425-46 | TRANSISTOR XP4315-TXE | |
| Q501 | 8-729-805-25 | TRANSISTOR 2SB1121 | |
| Q502 | 8-729-805-25 | TRANSISTOR 2SB1121 | |
| Q503 | 8-729-422-18 | TRANSISTOR XN4315 | |
| Q504 | 8-729-216-22 | TRANSISTOR 2SA1162-G | |
| Q505 | 8-729-015-76 | TRANSISTOR UN5211 | |
| Q508 | 8-729-230-49 | TRANSISTOR 2SC2712-YG | |
| Q509 | 8-729-230-49 | TRANSISTOR 2SC2712-YG | |
| Q512 | 8-729-015-74 | TRANSISTOR UN5111 | |
| Q514 | 8-729-140-75 | TRANSISTOR 2SD999-CLCK | |
| Q515 | 8-729-820-86 | TRANSISTOR 2SB1121-ST | |

## MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| Q516 | 8-729-402-45 | TRANSISTOR | UN5212 | | |
| Q517 | 8-729-402-96 | TRANSISTOR | UN5114 | | |
| Q518 | 8-729-924-62 | TRANSISTOR | DTC113ZU | | |
| Q519 | 8-729-216-22 | TRANSISTOR | 2SA1162-G | | |
| Q2001 | 8-729-402-45 | TRANSISTOR | UN5212 | | |
| Q3001 | 8-729-420-50 | TRANSISTOR | UN5215 | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R102 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R103 | 1-218-740-11 | METAL CHIP | 100K | 0.50% | 1/16W |
| R104 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R105 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R106 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R108 | 1-218-724-11 | METAL CHIP | 22K | 0.50% | 1/16W |
| R109 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R110 | 1-218-873-11 | METAL CHIP | 12K | 0.50% | 1/16W |
| R111 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R113 | 1-218-736-11 | METAL CHIP | 68K | 0.50% | 1/16W |
| R115 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R116 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R120 | 1-218-694-11 | METAL CHIP | 1.2K | 0.50% | 1/16W |
| R121 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R122 | 1-218-672-11 | METAL CHIP | 150 | 0.50% | 1/16W |
| R123 | 1-218-672-11 | METAL CHIP | 150 | 0.50% | 1/16W |
| R127 | 1-218-730-11 | METAL CHIP | 39K | 0.50% | 1/16W |
| R129 | 1-218-724-11 | METAL CHIP | 22K | 0.50% | 1/16W |
| R130 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R132 | 1-216-802-11 | METAL GLAZE | 27 | 5% | 1/16W |
| R133 | 1-216-848-11 | METAL CHIP | 180K | 5% | 1/16W |
| R136 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R137 | 1-218-710-11 | METAL CHIP | 5.6K | 0.50% | 1/16W |
| R138 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R140 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R151 | 1-218-670-11 | METAL CHIP | 120 | 0.50% | 1/16W |
| R152 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R153 | 1-218-844-11 | METAL CHIP | 750 | 0.50% | 1/16W |
| R155 | 1-218-695-11 | METAL CHIP | 1.3K | 0.50% | 1/16W |
| R156 | 1-211-983-11 | METAL CHIP | 39 | 0.50% | 1/16W |
| R157 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R158 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R159 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R160 | 1-218-700-11 | METAL CHIP | 2.2K | 0.50% | 1/16W |
| R162 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R164 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R173 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R174 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W |
| R177 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R178 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R179 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R180 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R181 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R201 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R202 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R203 | 1-218-740-11 | METAL CHIP | 100K | 0.50% | 1/16W |
| R204 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R205 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R206 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R208 | 1-218-724-11 | METAL CHIP | 22K | 0.50% | 1/16W |
| R209 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R210 | 1-218-873-11 | METAL CHIP | 12K | 0.50% | 1/16W |
| R211 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R213 | 1-218-736-11 | METAL CHIP | 68K | 0.50% | 1/16W |
| R215 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R216 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R220 | 1-218-694-11 | METAL CHIP | 1.2K | 0.50% | 1/16W |
| R221 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R222 | 1-218-672-11 | METAL CHIP | 150 | 0.50% | 1/16W |
| R223 | 1-218-672-11 | METAL CHIP | 150 | 0.50% | 1/16W |
| R227 | 1-218-730-11 | METAL CHIP | 39K | 0.50% | 1/16W |
| R229 | 1-218-724-11 | METAL CHIP | 22K | 0.50% | 1/16W |
| R230 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R232 | 1-216-802-11 | METAL GLAZE | 27 | 5% | 1/16W |
| R233 | 1-216-848-11 | METAL CHIP | 180K | 5% | 1/16W |
| R236 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R237 | 1-218-710-11 | METAL CHIP | 5.6K | 0.50% | 1/16W |
| R238 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R240 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R251 | 1-218-670-11 | METAL CHIP | 120 | 0.50% | 1/16W |
| R252 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R253 | 1-218-844-11 | METAL CHIP | 750 | 0.50% | 1/16W |
| R255 | 1-218-695-11 | METAL CHIP | 1.3K | 0.50% | 1/16W |
| R256 | 1-211-983-11 | METAL CHIP | 39 | 0.50% | 1/16W |
| R257 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R258 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R259 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R260 | 1-218-700-11 | METAL CHIP | 2.2K | 0.50% | 1/16W |
| R262 | 1-218-716-11 | METAL CHIP | 10K | 0.50% | 1/16W |
| R264 | 1-218-692-11 | METAL CHIP | 1K | 0.50% | 1/16W |
| R273 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R274 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W |
| R277 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R278 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R279 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R280 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R281 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R301 | 1-216-815-11 | METAL CHIP | 330 | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R304 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R305 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R306 | 1-216-853-11 | METAL CHIP | 470K | 5% | 1/16W |
| R307 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R308 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R309 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R310 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R312 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |
| R313 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R314 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R315 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R316 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R317 | 1-216-851-11 | METAL CHIP | 330K | 5% | 1/16W |
| R318 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R319 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R320 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R321 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R322 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R323 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R330 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R331 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R332 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/16W |
| R334 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R336 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R337 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R338 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R342 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |
| R343 | 1-216-848-11 | METAL CHIP | 180K | 5% | 1/16W |
| R344 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R351 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R352 | 1-216-854-11 | METAL CHIP | 560K | 5% | 1/16W |
| R353 | 1-216-863-11 | METAL GLAZE | 3.3M | 5% | 1/16W |
| R355 | 1-216-854-11 | METAL CHIP | 560K | 5% | 1/16W |
| R356 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R358 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R359 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W |
| R360 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R361 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R365 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R366 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R371 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R372 | 1-216-854-11 | METAL CHIP | 560K | 5% | 1/16W |
| R373 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R374 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/16W |
| R375 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W |
| R376 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R377 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R378 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R379 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R380 | 1-216-848-11 | METAL CHIP | 180K | 5% | 1/16W |
| R381 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R382 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |
| R383 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |
| R384 | 1-216-848-11 | METAL CHIP | 180K | 5% | 1/16W |
| R385 | 1-218-851-11 | METAL CHIP | 1.5K | 0.50% | 1/16W |
| R386 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R387 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R389 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R390 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R392-395 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R396 | 1-218-710-11 | METAL CHIP | 5.6K | 0.50% | 1/16W |
| R397 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W |
| R398 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R399 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R400 | 1-216-849-11 | METAL CHIP | 220K | 5% | 1/16W |
| R401 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R402 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R410 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R501 | 1-216-794-11 | METAL CHIP | 5.6 | 5% | 1/16W |
| R502 | 1-216-828-11 | METAL CHIP | 3.9K | 5% | 1/16W |
| R503 | 1-216-813-11 | METAL CHIP | 220 | 5% | 1/16W |
| R504 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W |
| R505 | 1-216-794-11 | METAL CHIP | 5.6 | 5% | 1/16W |
| R506 | 1-216-794-11 | METAL CHIP | 5.6 | 5% | 1/16W |
| R508 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |
| R509 | 1-216-811-11 | METAL CHIP | 150 | 5% | 1/16W |
| R510 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |
| R511 | 1-216-840-11 | METAL CHIP | 39K | 5% | 1/16W |
| R512-514 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |
| R516 | 1-216-023-00 | METAL CHIP | 82 | 5% | 1/10W |
| R517 | 1-216-813-11 | METAL CHIP | 220 | 5% | 1/16W |
| R518 | 1-217-806-11 | METAL GLAZE | 1 | 5% | 1/8W |
| R519 | 1-217-806-11 | METAL GLAZE | 1 | 5% | 1/8W |
| R520 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R521 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R522 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R523 | 1-216-832-11 | METAL CHIP | 8.2K | 5% | 1/16W |
| R524 | 1-216-828-11 | METAL CHIP | 3.9K | 5% | 1/16W |
| R525 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/16W |
| R526 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |
| R527 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R528 | 1-216-826-11 | METAL CHIP | 2.7K | 5% | 1/16W |
| R529 | 1-218-889-11 | METAL CHIP | 56K | 0.50% | 1/16W |
| R530 | 1-216-826-11 | METAL CHIP | 2.7K | 5% | 1/16W |
| R531 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R533 | 1-218-748-11 | METAL CHIP | 220K | 0.50% | 1/16W |

## MAIN TRANSFORMER

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R534 | 1-218-748-11 | METAL CHIP | 220K | 0.50% | 1/16W |
| R535-539 | | | | | |
| | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W |
| R540-542 | | | | | |
| | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R544 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R545 | 1-216-801-11 | METAL CHIP | 22 | 5% | 1/16W |
| R546 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R547 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R548 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R549 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R550 | 1-216-174-00 | METAL GLAZE | 100 | 5% | 1/8W |
| R551 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W |
| R552 | 1-216-834-11 | METAL CHIP | 12K | 5% | 1/16W |
| R553 | 1-218-684-11 | METAL CHIP | 470 | 0.50% | 1/16W |
| R554 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W |
| R555 | 1-216-811-11 | METAL CHIP | 150 | 5% | 1/16W |
| R556 | 1-216-818-11 | METAL CHIP | 560 | 5% | 1/16W |
| R557 | 1-216-818-11 | METAL CHIP | 560 | 5% | 1/16W |
| R558 | 1-218-676-11 | METAL CHIP | 220 | 0.50% | 1/16W |
| R559 | 1-218-740-11 | METAL CHIP | 100K | 0.50% | 1/16W |
| R560 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R561 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R564 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |
| R565 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |
| R566 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R567 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W |
| R568 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R569 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R570-572 | | | | | |
| | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W |
| R573 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R574 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W |
| R575 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R577 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R578 | 1-216-842-11 | METAL CHIP | 56K | 5% | 1/16W |
| R579 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/16W |
| R580 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/16W |
| R581 | 1-216-835-11 | METAL CHIP | 15K | 5% | 1/16W |
| R582 | 1-216-794-11 | METAL CHIP | 5.6 | 5% | 1/16W |
| R583 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R584 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W |
| R585 | 1-218-873-11 | METAL CHIP | 12K | 0.50% | 1/16W |
| R586 | 1-218-732-11 | METAL CHIP | 47K | 0.50% | 1/16W |
| R587 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R588 | 1-216-819-11 | METAL CHIP | 680 | 5% | 1/16W |
| R589 | 1-216-849-11 | METAL CHIP | 220K | 5% | 1/16W |
| R590 | 1-216-849-11 | METAL CHIP | 220K | 5% | 1/16W |
| R592 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| R593 | 1-216-843-11 | METAL CHIP | 68K | 5% | 1/16W |
| R596-598 | | | | | |
| | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R599 | 1-216-854-11 | METAL CHIP | 560K | 5% | 1/16W |
| R600 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R601 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R602 | 1-216-812-11 | METAL CHIP | 180 | 5% | 1/16W |
| R608 | 1-216-816-11 | METAL CHIP | 390 | 5% | 1/16W |
| R609 | 1-216-849-11 | METAL CHIP | 220K | 5% | 1/16W |
| R610 | 1-216-838-11 | METAL CHIP | 27K | 5% | 1/16W |
| R611 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R614 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R2001 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R2002 | 1-216-854-11 | METAL CHIP | 560K | 5% | 1/16W |
| R2003 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W |
| R2004 | 1-216-851-11 | METAL CHIP | 330K | 5% | 1/16W |
| R2005 | 1-216-844-11 | METAL CHIP | 82K | 5% | 1/16W |
| R3001 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W |
| R3002 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W |
| R3003 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W |

< VARIABLE RESISTOR >

| | | |
|---|---|---|
| RV301 | 1-223-361-11 | RES, VAR, CARBON 20K/20K (REC LEVEL) |
| RV501 | 1-238-667-21 | RES, ADJ, CERMET 100K |

< SWITCH >

| | | |
|---|---|---|
| S301 | 1-571-277-11 | SWITCH, SLIDE (MIC SENS) |
| S302 | 1-692-605-11 | SWITCH, SLIDE (REC MODE) |
| S501 | 1-571-506-41 | SWITCH, SLIDE (SP/LP) |

< VIBRATOR >

| | | |
|---|---|---|
| X501 | 1-579-924-11 | VIBRATOR, CRYSTAL (CHIP TYPE) (9.408MHz) |
| X502 | 1-579-924-11 | VIBRATOR, CRYSTAL (CHIP TYPE) (9.408MHz) |
| X503 | 1-579-923-11 | VIBRATOR, CRYSTAL (CHIP TYPE) (22.5792MHz) |
| X504 | 1-579-922-11 | VIBRATOR, CRYSTAL (CHIP TYPE) (24.576MHz) |

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TRANSFORMER BOARD
(SUPPLIED WITH MAIN BOARD, COMPLETE)
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< CAPACITOR >

| | | | | | |
|---|---|---|---|---|---|
| C589 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C590 | 1-164-234-11 | CERAMIC CHIP | 1uF | | 10V |
| C612 | 1-125-507-11 | CAPACITOR | 0.22F | | 5.5V |
| C901 | 1-163-986-00 | CERAMIC CHIP | 0.027uF | 10% | 25V |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < TRANSFORMER > | |
| IVT501 | 1-423-601-11 | TRANSFORMER, OSCILLATION | |
| | | < TRANSISTOR > | |
| Q513 | 8-729-120-28 | TRANSISTOR 2SC1623-L5L6 | |
| | | < RESISTOR > | |
| R562 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R563 | 1-218-736-11 | METAL CHIP 68K 0.50% 1/16W | |
| ********** | | | |
| | | MISCELLANEOUS | |
| | | ********** | |
| 6 | 1-467-043-21 | SYSTEM CONTROL BOARD UNIT | |
| 25 | 1-467-044-11 | SWITCH UNIT (BLOCK TYPE) | |
| 104 | X-4943-984-1 | DRUM ASSY (INCLUDING RF MODULE) | |
| 130 | 8-835-495-01 | MOTOR, DC SCR-0201A | |
| D1001 | 8-719-988-42 | LED GL453S | |
| M1001 | 1-698-104-11 | MOTOR (WITH GEAR) | |
| PM1001 | 1-454-602-11 | SOLENOID, PLUNGER | |
| Q1001 | 8-729-925-30 | PHOTO TRANSISTOR PT4810FJ | |
| Q1002 | 8-729-925-30 | PHOTO TRANSISTOR PT4810FJ | |
| S1001 | 1-571-878-11 | SWITCH, PUSH (2 KEY) | (CASSETTE DET/REC PROOF) |
| S1002 | 1-572-288-11 | SWITCH, PUSH (AC POWER) (1 KEY) | (CASSETTE COMPARTMENT LOCK) |
| ********** | | | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | ACCESSORIES & PACKING MATERIALS | |
| | | ********** | |
| ⚠ | 1-467-064-11 | ADAPTOR, AC (AC-E60AM) (JE) | |
| ⚠ | 1-467-570-31 | ADAPTOR, AC (AC-E60HG) (AEP, G) | |
| ⚠ | 1-467-906-11 | ADAPTOR, AC (AC-E60HG) (US, Canadian) | |
| ⚠ | 1-569-007-11 | ADAPTOR, CONVERSION 2P (JE) | |
| | 1-590-264-11 | CABLE, OPTICAL DIGITAL (AEP, G) | |
| | 3-388-826-01 | CASE, CARRYING | |
| | 3-756-789-01 | MANUAL, INSTRUCTION (JAPANESE, ENGLISH) | (JE) |
| | 3-756-789-11 | MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, PORTUGUESE, | ITALIAN) (JE) |
| | 3-810-253-01 | MANUAL, INSTRUCTION (JAPANESE) (JE) | |
| | 3-810-253-11 | MANUAL, INSTRUCTION (ENGLISH, FRENCH) | |
| | 3-810-253-21 | MANUAL, INSTRUCTION (GERMAN, SPANISH) | (AEP, G, UK, E, JE) |
| | 3-810-253-31 | MANUAL, INSTRUCTION (ITALIAN, DUTCH) | (AEP, G, UK, E) |
| | 3-810-253-41 | MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE) | (AEP, G, UK, E) |
| | 3-810-253-51 | MANUAL, INSTRUCTION (KOREAN) (JE) | |
| * | 4-979-703-01 | INDIVIDUAL CARTON (UK, E) | |
| * | 4-979-705-01 | INDIVIDUAL CARTON (AEP, G) | |
| * | 4-979-709-01 | INDIVIDUAL CARTON (US, Canadian) | |
| * | 4-979-712-01 | INDIVIDUAL CARTON (JE) | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

## REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper on the revised page allows you to jump to the next revised page.

| Ver. | Date | Description of Revision |
|---|---|---|
| 1.1 | 2001. 06 | Change of Part No. for CASE ASSY, BATTERY (Including Correction-1) (ECN-DA800263) |
| 1.0 | 1995. 10 | New |